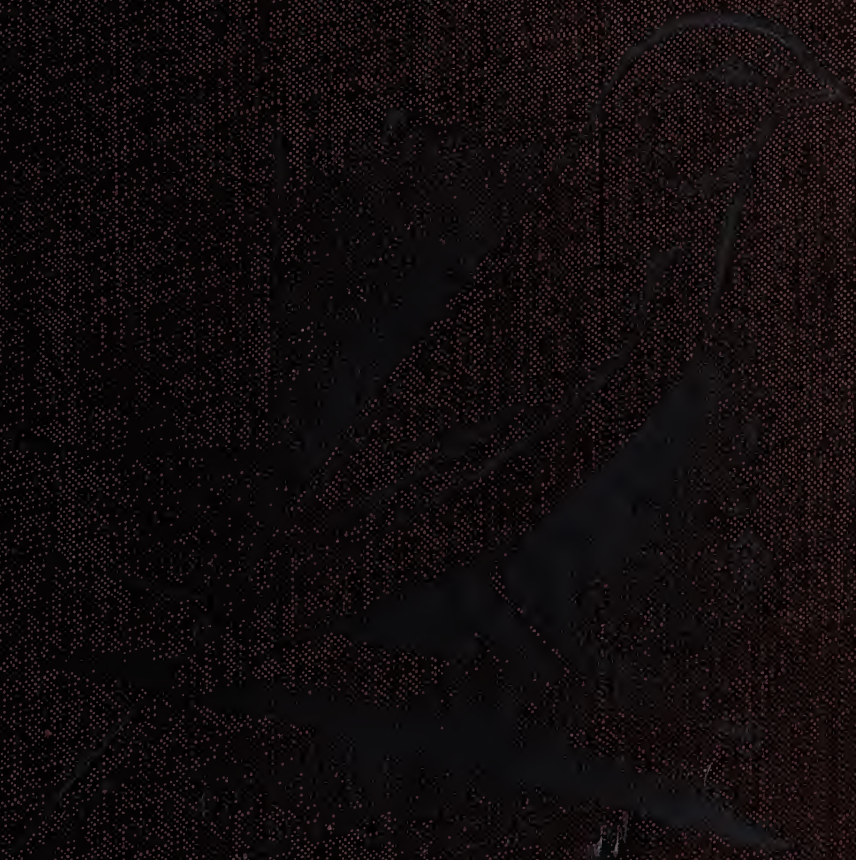


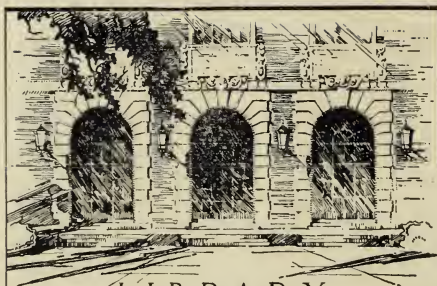
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THE
BIRD WORLD
MAGAZINE.





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THE BULLFINCH.

"THE BIRD WORLD."

"THE BIRD WORLD" is the latest word in "specialist" periodicals. Though limited in its scope its boundaries are invisible, so vast a sphere of interest does its title cover and its aims include. The love of birds is a widespread feeling. Interest in the habits and appearance of our feathered friends is pretty general, and in many cases intense. The number of books dealing with bird life published during the last half-century, many of them elaborate and expensive productions, seems to provide abundant proof of this interest. And certain it is that few fields offer greater attractions to the student of nature, or present more curious and wonderful subjects for study, than does the world of feathers. It will be one of the principal aims of this magazine to endeavour to familiarize the general public with bird life in all its many fascinating lights. "THE BIRD WORLD" Magazine will not confine itself to catering for the enthusiastic aviculturist. Those who do not keep birds like to read about them. Every month "THE BIRD WORLD" will try to provide a budget of light but instructive and reliable literature, agreeably broken up by selected photographs and artistic drawings. Occasional coloured plates by the best bird artists will relieve the monotony of black and white. The first number, as all first numbers do, must inevitably fall far short of what will eventually be possible with such a magazine, in such a field. But only with the cordial co-operation of our readers can we hope to attain the ideal. We invite, nay, we beg criticism and helpful suggestion. Original photographs and articles, practical experiences, will always find a warm welcome. Founded as an outcome of the success of "Cage Birds" weekly, "THE BIRD WORLD" possesses a card of introduction that may at least usher it into the portals of the bird-keeper's favour. Upon its initial reception, and the help and encouragement it receives from you who are a bird-keeper or you who are a bird-lover, will entirely depend its future existence and welfare, for on our side nothing will be wanting to deserve an extension to "THE BIRD WORLD" of the many and much appreciated favours shown to "CAGE BIRDS."

Chirps and Chatter.

NEWS FROM NEW YORK.

An interesting event in the avicultural world has been the recent stay in London of Mr. S. Stacey, the chief bird-keeper in the Zoological Gardens in Bronx Park, New York. Mr. Stacey, who was formerly in the employ of our Society here as keeper of the pheasants, has been studying both Foreign and British birds for the New York Gardens, and arranging for exchanges with our Zoo. He did not bring many birds over here, our wants not being well known in the States, but among those he did bring was a hen Blue Robin, a welcome addition, as the Zoo had long had a fine male but no mate for him.

PROHIBITED EXPORTS.

I doubt if aviculturists have as yet fully grasped the fact that the export of native birds from the United States is now prohibited, and so there will be no more Blue Robins, Virginian Nightingales, Indigos, or Nonpareils to be had, unless some enterprising dealer gets them from Mexico, where many of these birds go in winter. I fancy this is being done, as Virginian Nightingales have been on sale this year with one dealer at least, and their extra bright colour pointed to their being of the southern race.

THE FUTURE OF AVICULTURE.

It is about time foreign bird fanciers woke up and bestirred themselves to establish tame-bred strains of some of their favourites, as in case of the extended prohibition of the export of birds from abroad we shall be left with practically nothing but the Canary or Budgerigar in the cage-bird section of aviculture. Among the Pheasant and Water-fowl groups several desirable species are well established; for instance, the American prohibition does not affect the Californian Quail and Carolina Duck, which are always to be obtained as European-bred stock.

TROGONS IN CAPTIVITY.

Mr. Stacey told me that they found no difficulty in keeping Trogons in New York, the species being, if I remember right, *Trogon Mexicanus*. They were fed on a soft-bills' mixture containing egg, potato, currants, etc., and gave no trouble. Till recently these birds were hardly known to aviculture, although one specimen of an Indian species lived for some time in the Calcutta Zoo, being fed on grasshoppers and cockroaches. The Trogons are about the size of a Turtle-dove, as a rule, and are tropical birds of sluggish habits and very beautiful plumage. It is a curious fact that the old-world Trogons are mostly insectivorous and the American ones fruit-eaters, while in the Barbets the difference is the other way.

A RARE MANNIKIN.

Passing a dealer's a little while ago I noted some Mannikins which were very similar to the well-known Striated Finch (*Uroloncha striata*), but not quite the same, being lighter above, with the shaft-lines of the feathers hardly noticeable and having the rump black instead of white. Reference to the British Museum Catalogue of Birds showed them to be *Uroloncha leucogastrides* of Java and Sumatra, a species which seems not to have been imported before, though it has probably been overlooked. It ought presumably to be known as the Black-rumped Finch (or, better, Mannikin), the

black rump being its chief distinction from the better-known Indian Striated Finch.

BREEDING PENGUINS.

The greatest avicultural success achieved by the Zoo of recent years has been the breeding of the common Cape Penguin (*Spheniscus demersus*) on the rocks in the Seal-pond; no Penguins having been previously bred in England. Two eggs were laid, and both hatched; the young birds remained long in the nest, although well covered with down. They began to fledge on the face and the curious, paddle-like wings first, but are now well covered with feathers and come forward to a place on the rocks whence they can look out on the world.

HYBRID PARRAKEETS.

Several of the Pennant-Rosella hybrid have been in evidence of late, and the young plumage of this cross may be striated. This plumage is mostly green, like that of the young Pennant, but with distinct blackish mottling on the back of the adult. These birds show their Rosella characters more; but the first specimens known were named as distinct, and called the Red-mantled Parrakeet (*Platyercus erythropeptus*). This cross is fertile.

AN HONOUR FOR BIRD-KEEPERS.

On October 19th last Sir William Treloar, the present Lord Mayor of London, opened the annual show of the London Cage Bird Association at the Royal Horticultural Hall, Vincent Square, Westminster, says a writer in "The Queen." In this there was something peculiarly fitting, as Sir William has a good private aviary and is very fond of birds, of which he told some amusing stories; and, moreover, the profits were to be given to the Crippled Children's Hamper Fund, which he founded, and of which he is the treasurer. This show, the eighteenth that has been held, was in all respects a success. The Lizard Canaries, which are only in show feather for a year, furnished Sir William with an appropriate jest—that they resembled the Lord Mayor, who wore a splendid dress for twelve months, and then went back to the sober garments of everyday life.

IN SPITE OF THE BIRD CATCHERS.

Mr. Chapman, an American ornithologist, who came over to this country for the International Ornithological Congress last summer, was much struck by the abundance of the Rook, Starling, "the splendid Woodpigeon," and the Moorhen, and generally by the fact that, in spite of universal bird-nesting and bird-catching, birds are more numerous here than in the States. They have not, he observes, to face the rigorous winters of America, and a much greater proportion are permanent residents, avoiding the dangers consequent on constant migration. Of the 225 ordinary British species 134 remain with us all the year. Out of 310 New York species only 35 are permanently resident.

THE CHILIAN MOCKING THRUSH.

One of the most recent acquisitions of the London Zoo is a Chilean Mocking Thrush (*Mimus thunca*). If not gaily plumaged it is a fine, handsome, reachy bird. From the field notes of travelling naturalists (L. Fraser, P.Z.S., Part xi., first series, and others) we gather that it is a fine songster, that it builds in tall trees, also that its nest and eggs are very similar to those of our English Blackbird.

In the Fields and Woods.

By H. NORMAN.

IN THE FIELDS.

Although yellow autumn is with us, we occasionally cannot resist the temptation to let our thoughts wander back to the delights of the past summer, for it has been a most glorious time, and all that one could wish for, let him be botanist, entomologist, bird-lover, or a seeker after the hidden mysteries of Nature. We have had soft breezes and warm, sunny days, and whether we have stood and watched the gorgeous butterfly flitting past, the heavily-laden bees pass from flower to flower; or, prone upon the ground, have listened to the carolling of the tiny speck of feathers high up in the vault of blue, the time spent in the open has been more than usually interesting.

INCREASING BIRD LIFE.

So fast has wild bird life increased, especially among the smaller species, that each hedge, and almost every bush, has contained, during the season, its cradle full of downy youngsters, sleek and satisfied, for few creatures tend, and care for their young as wild birds do. The wind may blow and rock the cradle, occasionally bumping it against some handy branch, yet the birds lie tight and cosy; but touch it with one's hand, and all the heads bob up, the beaks are open, for something living has come in contact with the structure. The sense of touch must be keen in such little mites to enable them to so quickly detect the difference. And when the eyes first open, how quick they are to note the strange presence, for to wild creatures anything unusual is dangerous, something to be shunned, to be hidden from; and yet birds are not long in knowing their friends, and soon get accustomed to daily visits from the same person. Go near a colony, no matter what the species, and see how quickly they recognise the presence of a stranger; but visit the place daily, and after a time they get to know you, and go about their usual duties quite unconcerned. Some even of the most wary birds may be observed by following this plan; the noisy redshank, for instance, will cease his yelping, and after a few flapping circles settle on a distant gate, and simply keep his eye on you.

OUR MISSING FRIENDS.

Now that the harvest is gathered, and the fields have lost a good deal of their colour and beauty, we naturally feel that in the passing of summer we have lost a host of friends. The hedgerows are still beautiful with bunches of crimson berries, but we miss the flitting warblers, the chattering song of the whitethroat, and the gentle "whit-whit" of the nightingale.

THE CHANCE OF THE COMMONER.

But so rich is our land in wild bird life that we have plenty left to study and interest us, and had we the warblers always with us it is doubtful if our commoner birds would get the notice they deserve. That flock of chattering linnets would pass unnoticed, although they are clearing the land of the scattered seeds of charlock and other noxious weeds, doing good service to mankind. We see the flocks of busy starlings rising as we approach, with a twirling, skimming flight, settling again close handy; the hordes of sparrows, like some big com-

munity, working for dear life—no idlers here, each for himself, for the lazy or weak would soon perish. And then, as the season changes, our wild life changes, too. The bramblings and the handsome fieldfares have come from northern climes, the flocks of pigeons from the east, the blue tits from their summer quarters. Cheery robin has come from the distant woods, and we love to see him, for his crimson breast gives a spot of living colour to the sombre surroundings.

IN THE WOODS.

The woods have lost the brightness of the summer months; the changing foliage has been followed by the falling leaves, but the thinning of the tops adds, if possible, to the beauty of the timber, for we can now trace the limbs of the sturdy oaks and the slender ash, while the graceful birch, with the golden catkins swaying in the breeze, are not now hidden by the dense foliage. The long, dry summer caused a shedding of the leaves rather earlier than usual, but the rains stayed the fall, and now we get the full beauty of the woods. The leaves have changed while hanging, and the artist's palette needs all the colours that the ingenuity of man can invent to imitate such glorious colouring.

SEEN IN THE FOREST.

Like the fields and the hedgerows, the forest has lost its summer denizens. We miss the warbling blackcap and the fire-tailed redstart, the 'pretty wood-wren and his cousins, the no less sprightly chiffchaff and willow warbler. The pheasants strut proudly under the trees, their soft tread hardly disturbing the thick carpet of leaves; a pair or two of wood pigeons are plainly discernible, their blue mantles and white neck-patches catching the eye, making them conspicuous objects among their brown surroundings; several are in the trees feasting upon the ripe acorns, for of all the fruit of the woods these are the most plentiful this season. The beech-nuts are scarce, more's the pity, for many of our resident birds feed largely on them during the short winter days, and badly they will be missed if the weather is at all severe. Now the woods are thinning we can see the cunning jay, who, screaming at some fancied danger, dashes through the branches, startling for the moment the feeding birds, but these, hearing nothing but a distant noise, resume their meal, being joined by a magpie in beautiful feather, who, with black and white coat, looks spick and span, the sheen of green and blue on his wings and tail glistening in the autumn sunlight. Down in the glade a glossy blackbird searches the long grass for favourite food, and here and there a song thrush takes short, sharp runs, stopping now and then to listen, and with vigorous thrusts digs out some luckless worm. A party of twittering tits go by, compelling attention by their very activity. Regular nomads are these when summer is over, wandering far and wide in search of the necessary life-giving morsels, for little comes amiss to these bright little fellows.

Occasionally, when the winter sunshine warms the tree-trunks, the bright brown squirrel will sit for a few minutes to enjoy the warmth.

Observed 29 Sept 47 Oberholser

In the Sanctuary.



1. The East Garden.

2. The Sundial.

3. The Lavabo.

Photos by Miss Milnes Gaskell.

Birds in the Sanctuary.

By LADY CATHERINE MILNES-GASKELL.

Far from the world there stands an ancient house at Much Wenlock known as the Prior's House. This venerable building rises beside a ruined church built by Roger, the renowned Earl of Montgomery, "lover" and adviser of William the Conqueror. Abbey and church were built by him to commemorate the great Norman victory, and for the greater glory of God. All round the church are planted trees and flowering shrubs, and between the ruined walls there is a fair garden, where many a bird builds each spring and early summer. I call this place my sanctuary, for just as in the middle ages men and women, when outlawed, sought a refuge in church or abbey, so in this little favoured spot no bird may be trapped or shot, and no nest may be taken. Some years ago I counted the various kinds of nests in the sanctuary, and they amounted in all to 23 sorts.

THE CHARM OF BIRDS.

Some of them, in fact, most of them, are well known to every naturalist, but the charm of birds is infinite, even of the commonest and dullest. If music can loosen a heart that care has bound, how much more can the unrestrained gush of melody poured forth by merle or mavis? In early days the poets knew the value of sweet sounds in a garden, besides the charm of sweet scents, and they knew also how greatly one delight adds to the charm of the other.

Scotch Jamie, the captive king, when a prisoner at Windsor, left us the most delightful picture of the garden beneath his prison window. He speaks of a garden fair, of arbours green, of hawthorn hedges, and of the deep shade they gave. He loved the thick boughs and leaves green, the shaded alleys, and the "sharp, sweet scent of the juniper," but best of all he loved "the little sweet nightingale," who sang bold and clear, now soft, now loud, so that all the walls, he declared, rang "right of their song."

Again, what can be more delightful in a rose-garden than bowers for the feathered choristers to build in, so that, as dear old Chaucer has it:

"When the savour of the roses swote,
Quite straighte to the heart rote,"

the owner of the garden can also regale his soul with the song of thrush or linnet.

THE CHANT OF THE STORM-COCK.

Nothing can conjure up the charm of summer so swiftly as the scent of a rose, and nothing can fill us with deeper delight than the triumphant chant of the Storm-Cock, as folks call him in Shropshireland, for in his magnificent gush of melody is the promise of all fair things. Last spring, as I heard one pipe his lay, or what the father of English poetry would have called his "Te Deum Amoris," I agreed with him that Tubal Cain, the first musician of the world,

"With key of armony could not unlocke
So sweet tune as the throstel can."

Perhaps there is no more delightful pastime than to lie down on a lawn, count the daisies, the empress flower of all flowers, "*si douce est la marguerite*," and to watch the wiles and ways of the wild birds as they fly hither and thither, and to and fro. If you have but patience, many are the different kinds that can easily be observed and their habits learned. A water wagtail will bob up and down, its loose tail wagging like a leaf in a summer breeze. A thrush will dart out from a hedge or thicket and carry off a worm; a pink-breasted chaffinch, with the pride of a Scotch piper, will strut or hover round you almost fearlessly, and at last catch a fly and vanish with a flash of snow-white wings; a swallow will skim the turf and disappear like lightning; and a fat, golden-beaked blackbird will appear, and then depart with an angry rattle, as though he was master of the whole place and that you were the intruder.

From far and near, from every tree and bower, will come the song of warblers, and the clear, bell-like note of robin and piedfinch, as we at Wenlock call the chaffinch.

GLIMPSES OF RARER BIRDS.

Besides these, glimpses can also be had of the rarer birds—black-pated bullfinches, the hen clad in Puritan fashion, and the cock a glory of brilliant plumage; goldfinches that recall Raphael's beautiful picture, and are so called because of the exquisite flash of their yellow wings. The cock, by the bye, has a very sweet note, with occasionally a sharp, shrill cry. Then there are greenfinches, a common variety of British bird, it is true, but exquisitely lovely with their pale primrose coloured and thick beaks, and their delicate pale olive-green plumage, which resembles green apples held up against the sunlight. The cock greenfinch has a curious song—one sweet note followed by a string of discords, almost as unmusical as the mutterings of an angry jay in the shadow of a wood.

Besides these full-fledged and charming inhabitants of a garden there are all the young creatures of early spring, often ugly, but always full of interest. There are half-fledged thrushes that gape at one with yellow beaks from their clay-bound nests; downy hedge sparrows who appear when the eggs are hatched, infinitesimal wrens, tiny yellow and blue tomtits, and scraps of dab-chicks by pond or mere. Last year a pair of moor-hens, even, built a nest encircled by some arum lilies that we planted in an old abbey stew-pond, and four years ago I found a nest of the yellow wagtail beside the water.

JACKDAWS AND OWLS.

I often come across pert young jackdaws, who flutter down from the ruined arches, and who hop about with grave blue eyes like the tint of February skies. These squeal loudly if one attempts to catch them, and peck ferociously at hand or glove. And on clear moonlight nights one can see the owls flying round the ruined church, and hear the young ones uttering their asthmatic cry for food. In the plantation behind the red-walled garden a pair of turtle doves build every year. They are shy birds, and in watching them complete silence is necessary. Each year young and old vanish in the early autumn and reappear in May. Besides the Wrekin doves, as we call them here, there are several pairs of wood-pigeons, who build their nests of twigs in ivy-clad poplars and among the ruined walls. What an angry rustle they make when disturbed, and how loudly they beat their wings in flight!

And, best of all, we have every year most welcome visitors in a pair of redstarts, who build in a broken column or arch of the ruins. Country folks have many names for this beautiful bird—fire-tails, flash-in-the-pans, red-hot-coals, are all names I have heard them called by. The cock redstart is an exquisitely lovely bird, only second to the kingfisher in brilliant plumage. He is about the size of a green linnet, and like a jewel in beauty when on the wing.

Besides the wild birds who find a refuge in the ruined church, I have three little oyster catchers that came from Holland a few weeks ago. They patter up and down the lawns with curious hopping movements, and utter a shrill, wild cry as they follow me in search of food. These birds can be warmly recommended as inhabitants of a garden. They do no damage to plant or flower, and eat many a slug and snail.

IN THE AVIARY.

In addition to these birds at liberty, I have adjoining the gazebo an aviary full of budgerigars, Java sparrows, and goldfinch mules and canaries. These last are of all colours, from richest orange to olive green.

The budgerigars are delightful little creatures. They hang like bats to branch and bar, or run up the fine wire netting like mice, and seem, in spite of their gorgeous emerald green plumage, as hardy as house sparrows. They are said to be spiteful in a small cage, but in a large aviary do their companions no harm, and soon become very saucy and tame. Plaintains they delight in, and shepherd's purse is a great treat to them. I feed them principally on millet and canary seed, and every day throw to them a handful of hemp seed, which brings all my birds to my feet in an instant. The canaries are very tame and charming, and sing deliciously from the first dawn of spring until the end of June, when they begin to moult and require some care—not too much green food, but a little of cooked beef fat given quite fresh, which I have always found of great value.

The song from birds in an outdoor aviary is delightful, and it cannot be too loud, but I should always recommend cage-bred birds for confinement, as they are quite happy, and do not long for the freedom of field or grove.

I had for many years as a feature of the abbey a great Persian cat. He was decidedly a bad mouser, and was wont to lie in a lordly way on cushion or sofa, but sometimes when the air was very mild he would lie on the wire netting of the aviary, and never attempted to do any harm to my little feathered friends.

GOOD SPIRITS OF THE GARDEN.

As I write, the sound of a blackbird piping on an apple tree against a twilight sky steals through my latticed chamber. His song is enchantingly beautiful, and is touched with divine melancholy. Birds are the good spirits of a garden, and to banish them is to take away the magic of a place.

Let us remember Karl Merz's words "and accept music as a gift, a most precious gift of God." "Let us," he writes, "study it with reverence and practise it with humility and diligence, so that we may catch and drink in the spirit of love which it breathes, which is of God, and which leads to God."



Waiting for something to turn up—a characteristic pose of the Kingfisher.



“Baited with the Rabble’s Curse.”

From the picture recently exhibited by Miss W. Austen, by kind permission of the artist.

A Prince of Darkness.

(SEE ABOVE ILLUSTRATION.)

There is probably no more unpopular individual in the bird world than the biggest of the owls, the Eagle owl. His talons are against every bird by night and by day, and they are only too glad of an opportunity to turn the tables so far as lies in their power. In Miss Austen’s beautiful picture, we may presume that the great owl has stayed up too late; perhaps hunting has not been good of late, and although nothing, from a frog to a fawn, from a cockchafer to a capercaillie, comes amiss to him, it is quite possible that night after night has passed and left him hungry. So he has not gone home in good time, hoping, no doubt, that he may yet get a meal from some early-stirring creature.

But, unfortunately for him, his watch-tower happens to be in the line of flight of the outgoing rooks; and now he sits in the golden light of dawn, snapping and bristling impotently before the cowardly mob whose relations he has often garrotted at night, and bearing their insults as best he may. He is in no danger at present, for they dare not dash in upon him, knowing too well the power of his terrible talons; but he is nervous and uncon-

fortable, and if the noise his persecutors are making attracts some of the diurnal birds of prey, matters may go hard with him. Falcon or goshawk may hustle him from his perch, for the hawks hate him as much as their enemies the crows, and if the eagle comes in sight, and makes good his pounce at his nocturnal rival, there will be a battle to the death, and even if the king of birds is victorious, he will hardly arise “unwounded from the dreadful close.”

Such a scene as is depicted can hardly be realised in our islands, where the Eagle-owl is a rare visitant, open to the suspicion of being an “escape”; but in the Continental forests, and all across Asia, the bird is widely spread, from Spain and Norway to China, and everywhere it is a scourge to game, though probably doing much good also in the destruction of vermin. The fact that he preys on the crow tribe whenever he gets the chance is a big point in his favour, for these black gentry have far too few foes to keep them down efficiently, and are much more destructive than the nobler birds of prey. The Spanish country-folk

turn the Eagle-owl's poaching proclivities to practical account, taking for their own use the game provided nightly for the young birds by their parents, and satisfying the appetites of the defrauded owlets with any convenient garbage.

The Eagle-owl is as accommodating in its breeding habits as in its appetite. It makes no nest, but lays its two or three white eggs in any convenient spot, among the roots of trees, or at the junction of their branches, in the old nest of some other large bird, on a ledge, or even a bank.

In captivity it is about the easiest to manage of all birds of prey. It can subsist on one full meal a week, and do without water altogether. Not that it ought to be treated in this way; for if we deprive a wild creature of its liberty, we ought in common fairness to make it as comfortable as possible, not try and see how much it can do without. The bird is also the freest breeder of predatory birds, and more than one generation has been obtained in captivity, so that it could easily be domesticated. It lives and retains its productiveness for long periods; a pair have been known to survive more than half a century, and breed regu-

larly for over thirty years. The sexes are alike in colour, both having the same tawny-and-black plumage, set off by the glorious amber eyes, but the male is smaller than the female, with proportionately longer wings, and has a different note, his call being a deep, gruff "boo," while the hen's is "ho-ho-ho," in a higher tone.

An aviary for these birds should have a dry, sheltered, indoor portion, with an earth floor on which they can scrape out a place to lay in, and an outdoor flight wherein they can enjoy the air and also the sun, for the Eagle-owl does not hate the light—it is its unpopularity that keeps it at home by day. The perches should be thick boughs, with the bark on, and not too numerous. Food should be given daily at nightfall, and consist mostly of "fur and feather," plain meat being given as seldom as possible, and water for drinking and bathing should be regularly provided. Care should be taken in approaching the birds when breeding, as at such times they are unpleasantly savage, and it is as well to keep a broom handy to make them keep their distance when the attitude depicted shows "the Grand Duke" is out of temper.



Buff Laughing Kingfisher (*Dacelo cervina*).

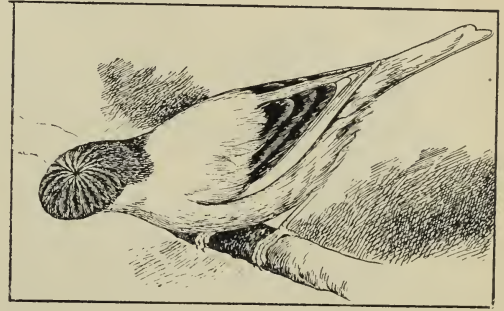
This breed is more brightly coloured than the familiar "Laughing Jackass," and has light instead of dark eyes.

The Evolution of the Canary.



The Wild Canary.

It is astonishing to think that such widely differing varieties of Canary as The Crest, the Scotch Fancy, and the Lizard should all have been evolved by the skill and patience of man from such an insignificant and unpretentious little creature as is shown in the above illustration, yet such is the case.



The Crested Canary.

The Crested Canary is remarkable for the crest or top-knot of feathers, and the rounder and more splendidly feathered the "crest" the more valuable the bird. Crested Canaries have frequently sold for more than £50 each.



The Scotch Fancy Canary.

The Scotchman's delight. These birds are not too easily bred or kept.



The Lizard Canary.

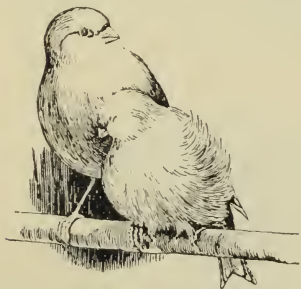
The Lizard Canary is a distinctly beautiful variety, notable for the circumstance of it resembling the Lord Mayor, in that it is only a "one year" bird. It only retains its attractive spangling for the space of twelve months.

Canary Breeding.

A Lady Amateur's Nine Years' Experience.

By MISS ALICE HINTON.

I am writing as the result of about nine years' experience and accumulated observations in the delightful hobby of breeding and rearing the canary. This pursuit has been one of my labours of leisure for the above period. A friend presented me, in the first instance, with a pair of Norwich canaries, telling me that the cock was upwards of ten years of age. I named him "Old Grandpapa," and that season paired him to the hen, who was said to be some years younger. She went by the name of "Little Muddie." In every way he was a model father, and that summer they brought up several birds. To my grief, Little Muddie died in the autumn. The aged couple were so devoted to each other, that the day before she died, Muddie rested her head on "Grandpapa's" breast for several hours.



"Rested her head on 'Grandpapa's' breast."

The following year I mated "Grandpapa" with a large green hen, named *Angélique*, after a French lady who presented her to me. They had three lovely birds. "Josie" was one, a large green cock, who now, at the age of seven years, is looked upon as the head of the large family,

which originated from "Grandpapa." There were two daughters—"Ann," who died, and "Elizabeth," who paired the following year with a yellow cock, and has brought up large families. "Grandpapa" had a third wife, a bright little London Fancy, and to her descendants the honour of some good Border Fancies are due,



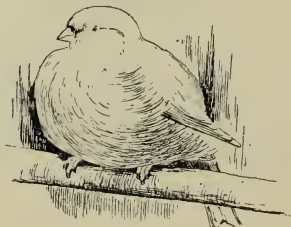
"Grandpapa" had a third wife—a bright little London Fancy."

a great-great-grandchild having taken a first and special at a recent show at Hastings. "Grand-

papa" lived to be twenty-two years of age, and about fifty of his descendants are now living. A genealogical tree is kept, and a diary of all their proceedings, by which means I am certain from what nest the birds proceed, as well as of their age and parentage.

The birds are for the most part inbred; each is given a name and is known by it. The old stock are always kept, but the young ones of each season are occasionally parted with; so that they may have the credit of saying that, to some extent, they are self-supporting. They generally breed between thirty and forty young in the season, mostly in the ordinary breeding cages; but three very tame sets are allowed to use the large aviary with the partitions between. These sets have wire baskets hung on, and felt nests inside, a little moss being given as an inducement to build. The eggs are never removed, as I think the hens must feel some satisfaction to see them come one after the other. It is my aim to make them happy and as natural in their habits as possible. My hens are only allowed two broods in the year; if their powers are taxed too heavily they seldom live very long. The trays during the breeding season are taken out three times a week, and when the young are a fortnight old they are removed into a clean nest in the nursery division, so that the hen should not pull their feathers out, as some mothers are inclined to do. I am confident that the tamer the birds are, the more successful are the results.

A careless father is paired the following year to an ideal mother, and vice versa with the hens. It is best to give a proved hen to a young cock. They are not allowed to choose their own mates; so in order not to hurt their feelings, they are separated before any attachment springs up among them. I give one instance of this. "Grandpapa's" son (from his third wife), named "Wee Tim," was left in the aviary on account of his being a very gentle bird; he made choice of a large hen, and was allowed that spring to mate her. The following season no inducements would get him to pair, and I found out the reason later on—his favourite was in the next breeding cage, and she continually cried to him. I moved him into another



"He moped, and that year would not pair."

room, but he moped, and that year he would not pair. The next year a wife was selected as like his favourite as possible, and they did very well.

Some canaries have so great an antipathy to each other that they cannot be brought to pair, and when this is seen they should be separated at once. If our birds are familiar with us as they should be, they will exhibit their confidence in our sympathy and make their wants known to us; I have always found that if there is anything amiss with their nestlings they attract my attention by signals that cannot be mistaken. My hens are fond of pulling my hair as the spring comes on, and then I either give them mates from my aviary, or part with them to friends. I am convinced that success depends upon perfect cleanliness, and great attention in all respects to their health. Mine are constantly under supervision, and the first signs of drooping leads to their removal from the large aviary to a small cage. I have had a few cases of asthma, and except in a very bad case have found most beneficial results from the cure prescribed in that valuable paper *CAGE BIRDS*, which I have taken regularly for the last three years. I am seldom troubled with the red mite—only a few in the breeding season. I resort to a lump of camphor dissolved in methylated spirit, and brush this well all round the woodwork. As I have before said, I am an advocate of perfect cleanliness, air and exercise.

I find my pets are very docile and enjoy a fly out. I never catch them, but throw into the aviary some favourite seed, niga, or a very few hems and they make a rush for that at once. They have a little nourishing food during their moult—bread and milk, with maw seed once a day. Their ordinary food is plain canary and rape. When setting, I give chopped egg with bread crumbs three times a day, and some put in their tin the last thing at night, as I find they feed their young in the early hours of the morning. They have green food, if possible, two or three times a week, groundsel, lettuce or watercress. It is better for them to have a little constantly, than a great quantity now and then, as they are apt to eat over-eagerly of it when given seldom. Variety in their food is necessary for all birds.

I collect for winter consumption plantain for the canaries, thistle and knapweed for my goldfinch and linnet, and privet berries for the bullfinch. These dainties they welcome, and I am sure they help to keep them in health with seed good and sound; birds not exposed to draughts or sudden changes of temperature rarely have much the matter with them. A bag of hems is always kept for them to eat from the hand, which means that amongst so many they only get about six each a day. I believe the canary is never fat if in health, as his constant singing and activity keeps him in condition. They have a bath every morning, cold in the summer, tepid in the winter. I give

them dried sea-sand, because I think that the saline properties are good, and instead of giving them sugar, they have pieces of cuttlefish hung in the aviary.

As the birds get into years they fly on my hand and take seeds from my mouth; sometimes some of the younger ones will follow their elders in doing the same.

I must tell you a little about a very tame bird, a grandson of old "Grandpapa." He is named Punchie, and is quite the children's friend; as he has an inordinate love for any dainty, I can always get him to fly on their hands for a tit-bit. He is a great lazy fellow, and has only paired twice, and each time had one large bird. His wife, "Myrtle," often would watch him eat the egg-food, and as he did not come up to feed her, would fly down to him in quite a temper and send him up to the nest. He is allowed a cage to himself; of a morning he will fly on to my cup, waiting patiently for a piece of soaked bread.

It may interest some of your readers to know what results from breeding came from a few of the families, so I will give you those of two seasons from old "Grandpapa's" eldest son by his second wife. Joseph, the green cock, was paired to his half-sister Coquette, a bright little buff hen with evenly marked wings. They had five little ones—Bartie, a fine, deep yellow-splashed cock; Pretoria, a green cock; and three clear hens. The second season "Joseph" was wed to a large green hen called Shamrock, and the result was a large clear-yellow cock, called Barney O'Hea, and two green hens. I keep a diary of the results of each year's breeding, and find that, generally speaking, the finest harmony is produced from opposition. I mean by this, that to breed a fine-coloured yellow bird without a spot or splash one should select a buff hen from a clear stock

and mate her with a clear yellow cock. To get fine-coloured pied birds, select a yellow cock and mate with a rich green hen. All these are tried facts.

All who see my birds compliment me on their glossy plumage and nice deep-yellow colour. I

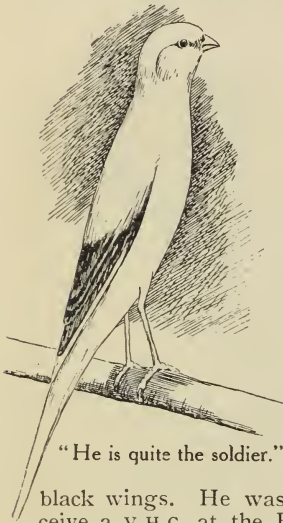


"Will fly on to my cup for a piece of soaked bread."



"My little Border Hen came out 1st and Special."

have never gone in for colour-feeding and may be termed old-fashioned for abhorring anything



"He is quite the soldier."

artificial. I have been told that by not doing so I have not as good a chance at the local show, so I felt naturally very proud when my little Border hen, "Miss Kitchie," came out first and special, with her own natural colour. She is a deep yellow with a smart black cap. "Grandpapa" has only three sons living, so I must mention the eldest by his third wife. He is called Greville, and is quite the soldier in his demeanour—very active and slim; a deep yellow with evenly-marked

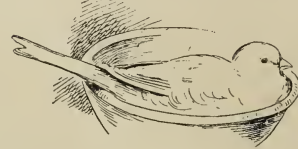
black wings. He was fortunate enough to receive a V.H.C. at the Hastings show two years ago. His son, called "Baden Powell," has been kept, as he possesses an unusually fine voice.

I put my young cock in hearing of a good songster, and generally have one of the cock birds unpaired, as I find those engaged with their wives and families are too well employed to sing constantly.

Last year a pair of Yorkshires were introduced into my happy family. They had six beautiful birds, as straight and upright as a good principle. The father was said to have come from a prize strain, but their matron (as I call myself) was too diffident to exhibit their young at the show, as the York competition is very keen at Hastings. My goldfinch was paired last season to a clear hen called Mollie. They had four eggs in the first nest; Goldie was taken away. The little hen sat patiently over a fortnight, but with no results. In the second nest she had three eggs, and to convince myself whether she would prove as good a mother as her own was, one canary egg was placed in the nest. At fourteen days one hatched; hopes ran high, but it proved to be a dark green canary. "Mollie" was proud of her solitary nestling "Bess," and kept her for six weeks. I hope for better success with Goldie this coming season. I shall mate my linnet also; she is known by the name of "Con," is very active and gentle and is about a year old.

I was rather loth at one time to keep wild birds; but, after much reflection, judged that, taken when quite young, they have not experienced the pleasures of freedom. All creatures were given by God for the use and pleasure of man, and therefore, if he desires to fill his home with melody, surely he may do so without offending the Great Maker, whose all-seeing eye lets not even a sparrow fall to the ground unnoted. We take upon ourselves the respon-

sibility of providing for their wants and attending to their ailments, and those who keep them should pay attention to them. They cannot speak, but their actions show us when anything is wrong.



"She sat patiently for over a fortnight."

At the request of several friends I ventured to write the above facts. I think that a lack of practical knowledge of the habits of the canary is the cause of disappointment to those who are unsuccessful with them when breeding. It may be that very experienced fanciers may smile at my remarks, which are purely on the domestic side.

In conclusion, let me say that they merit all that can be done for them. With joy I enter my bird-room; the fluttering of wings, the tapping of the bills against the wires of the cages, and the burst of song which greets me—all these signs tell me that my labour of love on their behalf is not in vain. I am quite sure my feathered tribe from "Josie" down to "Bess" appreciate all I do for them, and that those lost to me here by death will welcome and know me again on the other shore.

"Sweet birds! that sing away the early hours

Of winters past, or coming; void of care,

Well pleased with delights which present are—
Fair seasons, buddingsprays, sweet-smelling flowers;
To rocks, to springs, to rills, from leafy bowers,

Ye your Creator's goodness do declare."



Mrs. M. R. Staddon, of Luton, Beds., and her Pet Bullfinch.

The Norwich Canary.



Few words are needed for the purpose of introducing the Norwich Canary. It is already the favourite of Canary breeders—North, South, East, or West. There is something in his chubby beauty, sweet song, and alert manner which is quite irresistible so far as John Bull is concerned, and which has won him also a large share of the good esteem of J. B.'s Welsh, Irish, and Scotch compatriots.

It is probable that the City of Norwich, though no longer the pre-eminent exhibiting centre, is still the largest breeding centre. But the production of high-class specimens may be said now to go on in every large town in the United Kingdom.



Mr. T. Jones' (Wednesbury) Aviary.

Photo T. Jones.

On Outdoor Aviaries.

By W. GEO. CRESWELL, M.D.

The capturing and taming and—in the case of some species—the domestication of birds has been a pastime of mankind from the earliest ages. Therefore the art of cage and aviary building may reasonably be supposed to be one of the first arts practised by man. This being so, one would expect that ever since the first beginning there would have been a progressive improvement in the housing of our birds, and that by now there would be no necessity for the promulgation of hygienic ideas. But unfortunately for hundreds of years, in what is called the mediæval period, the science of medicine consisted in the mere handing down by the monks of the Galenical doctrines without the slightest endeavour to test their soundness, with the result that it is only within the memory of comparatively young men that any advance has been made towards the hygienic life, and that indeed not so much by the means of gradual evolution as by a sudden and violent revulsion from the ways of our forefathers.

Even now the reform has not sufficiently invaded the bird-keeping world. People who fully appreciate the value of fresh air for themselves,

and who proudly tell me that they live and sleep with their windows open all the year, thus daily deliver themselves when first admitted to my garden: "Oh! you've got aviaries out here! What a pretty place!—and *birds* in them, too! What! canaries? And do they live out here? Don't you take them in at night? Oh, and those dear little things! Look here, Clara, the doctor has got," etc., etc. Then, turning to the amused owner: "And you mean to say that these birds can *really* live out of doors?" It is no use to explain the why and wherefore of the astounding fact; one can only feebly say that birds have been used for countless generations to the outdoor life, and that for one's own part there seems to be no marvel in it. Of course the inevitable answer comes, "Well, I've never heard of it. I've always been told that birds needed warmth, and especially canaries and foreign birds." And it is only too plain that, in spite of what they have just seen with their own eyes, and what they have just been told as a plain fact, they go away only half-convinced, for their last word is always, "Well, it's most extraordinary," and ever afterwards their

first word is, "How are the birds? Are they still out of doors? Have you lost many—and do they stand the cold?"

HIDEBOUND CONVENTIONALITY.

When I was a young man, and indeed up to only a few years since, it was a tremendous rarity to see an aviary out in the garden, and even at the Zoological Gardens they are only just emerging from the thralldom of hidebound conventionality, since it is only about two years ago that, with many quakings and tremors of heart, even the parrots were experimented upon as outside dwellers, while even now the extraordinary spectacle can be seen of "the more delicate" avian species being kept *in glass cases in a superheated room!* Many of us can recall the virtuous indignation with which Mr. Wesley T. Page was greeted when some few years back he greatly dared to publish the fact that he actually kept Waxbills and such like out of doors. It is only a matter of months since the fond delusion that the Gouldian finch needed an "inferno" to keep him alive was shattered by the quiet narration of Capt. Perreau in *Bird Notes* of his Gouldians having travelled with him for months, and even bred, in regions which he described as not merely cold for India, but cold for anywhere. It is only a matter of a few weeks since a prominent writer in the *Avi-*

cultural Magazine delivered himself of the following remarkable passage: "The one great danger to be guarded against is **FRESH AIR!!!** Say what you like, with delicate birds *fresh air kills*, while a stuffy atmosphere, objectionable though it be, need not do so, nor need it sow the seeds of disease or impair the health."

But, as we see, these old-fashioned notions are being gradually replaced by better and wiser counsels; the ranks of the "delicate" birds are steadily being thinned to recruit those of the "hardy" ones; and there are to-day probably as many outdoor aviaries up and down the country as there are towns and villages in the kingdom. There only remains now, first to still further increase the number of these aviaries, and secondly to realise that most of the birds that are still supposed to be "delicate" are really quite able, like Mrs. Anningson's Tanagers, to withstand in this country what, after all, so we are assured by foreigners, is one of the most equable climates in the world—in spite of all our English grumbling to the contrary.

NO NEED OF EXPENSE.

Of outdoor aviaries there are many sorts. There is the elaborate affair, fitted with electric light, hot water apparatus, and ever-jetting fountains, only to be compassed by the man of wealth. At the other end of the scale there is



Mr. Sydney L. Cock's (Peterboro') Aviary.

The owner states: "This aviary was built as a last resort for curing Bullfinch hens from persistently laying soft-shelled eggs, and achieved its object."



Mr. Henstock's Aviary at Ashbourne.

Photo J. Harold Henstock.

Mr. J. H. Henstock writes: "At the back of the Aviary will be noticed an arrangement of pea sticks, which hold a quantity of hay, forming very cosy and warm sleeping quarters for small foreign finches. The Aviary is unheated, but in the severe winter an oilcloth cover can be put over the wired portion, plenty of light being admitted by the sky-lights. It has a south-west aspect, and is situated in our garden, in the centre of our pretty town."

the rude shed made of fragments of bacon boxes or ancient quartering from the house-breaker's yard, and completed with second-hand, dilapidated netting. Between these two the gradations, alike as to material, plan, and fittings, are infinite; and I am bound to say that, given a real love of the birds and a consistent attempt to consider their wants, the successes in the maintenance of their health and in enabling them to breed and rear their young have been as well marked in the cheapest as in the most expensive of these structures. This in my opinion is due to the absence of the enervating effects of coddling.

The accompanying photographs will give my readers a good idea of what may be considered useful and desirable aviaries. Take the first one, that of Mr. Jones of Wednesbury. Twenty feet long by four and a-half feet wide, built of just what rough materials came to hand, advantageously placed against a wall with a southern aspect, fitted up with natural boughs and an abundance of cocoa-nut husks for perches and resting-places, provided with a cosy retiring

place at one end for the birds at night, and with a substantial weather-board all along the bottom --this unpretending, yet by no means unattractive bird home affords its inmates every comfort they want, and reflects great credit upon the ingenuity and resourcefulness of its owner.

TWO FAULTS.

There are, however, two faults to be seen in it. First of all, the door extends right up to the top; and since birds, when frightened, nearly always—at least, very often—fly towards the intruder, and always keep as high as they can, such an arrangement is very apt to cause losses every now and again. The other fault is the presence of the two ledges inside close to the wires. Many birds will, in spite of all one's efforts, persist in roosting on such ledges, and thus offer a tempting mark to the ever prowling nocturnal cat. The result of the first feline spring is to startle the poor little bird so that it wildly flies backwards and forwards all the rest of the night, hitting itself time after time against the netting, and then clinging on to

it until the cat again makes a spring against it in its new position. And so the game of blind man's bluff reversed goes merrily on all night, ending only too often by the poor bird being hopelessly scalped in the course of its frantic efforts to find a resting-place where it shall be safe from its terrible enemy.

The next one, belonging to Mr. Sidney L. Cocks, of Peterborough, affords another example of what can be done in the way of building an aviary at once simple, cheap, useful, and attractive.

"Bowered in umbrageous shade of spreading trees,

On carpet green with golden cups bespangled," it has been the happy home of a Greenfinch-Bullfinch couple, and the scene of their successful mating.

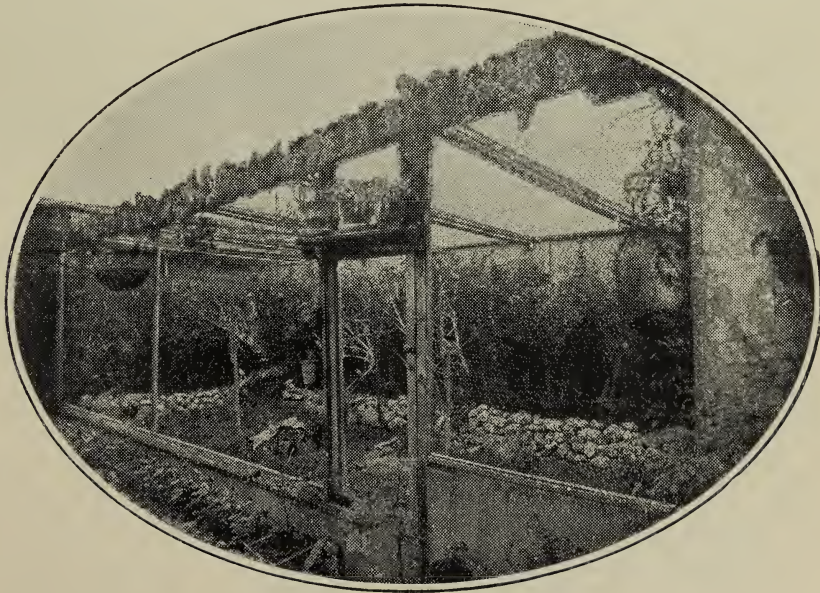
Our third example is that belonging to Mr. Henstock, of Ashbourne. Though somewhat commonplace in design as to the sleeping accommodation, shown on the left-hand side of the photograph, it yet exhibits points of such excellence as are worthy of all attention on the part of intending aviarists. The flight (10ft. 6in. long, 9ft. 6in. from back to front, and 8ft. high at the ridge), it will be seen, presents the admirable feature (in one of that shape) of being roofed-in as to the rear portion, affording therefore a great measure of shelter for the birds, and inducing them to breed and generally carry on the economy of a bird colony in sight of the student of ornithological habits.

AN ADVANTAGE.

It is also a great advantage in many ways

for the food vessels to be where their condition can be seen at a glance, and by means of the roof this is provided for, since through this shelter the seeds and any other foods are preserved from wet. The hanging circular perches, which are so well shown in this photograph, are a splendid adjunct to the natural boughs ranged along the wall at the back, and the little table in the centre for the bath dish tends greatly to the keeping of the water clean, while the rock-work and flower border give an artistic finish to the whole. In this aviary is kept a selection of various Waxbills, Pectoral, Rufous-tailed and Long-tailed Grassfinches, Gouldian finches, Bengalese, Zebra finches, etc., besides Canaries and a few British birds. Many of the smaller birds make cosy roosting-places for themselves in bunches of hay, which are placed in the boughs at the back.

The fourth and last example which I have selected to illustrate this article is of the same general design as the others, differing from them principally in the matter of size. At the back will be seen a thick hedge of privet, growing in a narrow border kept up by a bank of rockery. This is, to my mind, an important feature, and should always be present when the extent of ground space affords the opportunity. Not only do the bushes provide cover and shelter for the weaker birds when persecuted by any bully that may be confined with them, but their presence is often just the turning point between successful and unsuccessful nidification, and it is quite certain that much minute insect life is attracted by living greenery.



Mr. Sharple's Aviary at Hindley.

Cage Birds I Have Known.

By LADY HELEN FORBES.

I never walk in my garden and see the weeds which, I regret to say, flourish in that good soil with a hardy impudence, without wishing that I had an aviary to profit by what is otherwise so grievous. How beautiful the golden tassels of the groundsel, the star-eyed chickweed, the fat, green shepherd's purses, and the brown-green spikes of the plantain would look thrust between the bars of a cage, and how useful they would then be! Instead of being outcasts and things accursed, which I must say they show no signs of minding, they might be welcome—in moderation—and gathered carefully in baskets rather than hastened to the ignominious dust-heap.

I once kept birds, never many at a time, but always with the greatest affection, so that their frequent and untimely deaths were real grief to me. My whole youth was enlivened by their singing from the cages poised in the sunny windows of my schoolroom, so that to speak and write of birds is to bring back to me a whiff of my early youth. My early ambition—never realised; early ambitions never are—was to possess a real aviary, with nest boxes and swinging rings, full of beautifully plumaged and tuneful birds. One lady I was once taken to see as a child had a possession of this sort, full of Indigo birds, waxbills, and nonpareils, and for years I ardently desired one like it.

Goldfinches, however, were always my favourite birds; they are as pretty to look at, in fact, less garish than the more generally popular canary, and their song does not go through one's head with an equal piercingness. The "Thistle-finch," as he is sometimes called, becomes very tame, more so I believe than most English birds, and he is hardier than a foreigner. He also has not the evil and disheartening habits of the bullfinch, who eats himself to death as cheerfully as any dyspeptic millionaire. I had a goldfinch which was the joy of my heart for about four years. He was a very tame little bird, and I had chiefly tamed him myself, always an achievement to a child. I loved "Goldie" dearly, though I fear he had no particular affection for me; and it was a dreadful day for me when one fine morning he escaped from his cage and flew away into the open air. I was so fond of him that I used to keep a little diary with chronicles of his small doings; I have it still, and very trifling it is, but my childish description of, as I called it, the "black, and also red, letter day" of the bird's memorable flight is most graphic and moving. I am glad to say that after several hours of great unhappiness for me, we caught the precious finch in the garden and brought him home in triumph. I was only twelve then, and luckily "Goldie" lived till I was about fifteen and more philosophical. The entry in my

diary at the time of his demise—"And so there's an end of poor Goldie"—has little in common with the passionate grief and excitement which moved me when he flew away.

I do not remember loving any other of my birds as I did "Goldie." But I had a foreign bird of variegated plumage of which I was very fond. I do not know if it is the right name for such birds, but I knew "Bill" as a nonpareil. He had a pretty little pipe which was only heard on warm afternoons when the room was quiet, and he was always very wild and refused consistently to be handled. He remained with us but a short while, and was found dead in his cage one morning, perhaps of cold. I had soon afterwards a foreign bird of unknown name and fierce aspect, which escaped like "Goldie," but unlike him, never came back. He was seen for months afterwards round the house with the wild birds, evidently on perfectly good terms with them. I believe escaped cage birds generally endure a very hard time, culminating in a violent death at the hands of their wild brethren, but Arsène, as the yellow Brazilian bird was called, had a very strong beak, with which he doubtless overawed the sparrows and chaffinches of Berkshire.

I never cared much for canaries. I only remember one, a crested hen, with a very long body and neck, whom we called Gagool, as inhabiting my schoolroom, and her only merit was her sex and the fact that she could not sing. Another bird we had at the same time, or a little earlier, was an accomplished Redcap, which drew up its water in a little bucket and opened a box every time it wanted its seed. He worked very hard literally for his living, but he never sang, except for an odd note rather like a peewit's. I also owned several green birds of the parrot species, but found them uninteresting.

I do not recommend birds as pets for children, for if they become cherished pets there is such trouble and sorrow when they die that it scarcely seems worth it. And as birds are short-lived at best, where they are kept there are more tearful children than is needful. If they are not cherished by their youthful owners they are very apt to be forgotten, and this increases the normal tragedies of bird life, already so numerous.

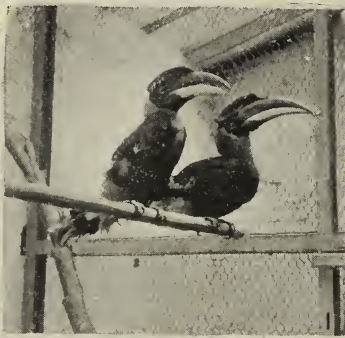
Tits.

Mr. George Rankin has very happily hit off the characteristics of the little group of Tits in the plate on the opposite page. They are among the most agile of birds, and perform what appear to the human eye astounding acrobatic feats among the trees when in search of food.



Foraging among the Firs. Blue Tits and Cole-Tits.

Some Representative Hornbills, or Toucans' Counterfeits.



1. Concave-casqued Hornbills.
3. Elate Hornbill.
5. Subcylindrical Hornbill.

2. Wreathed Hornbill.
4. Black Hornbill.
6. Ground Hornbill.

Hornbills.

By FRANK FINN, B.A., F.Z.S., M.B.O.U.

These remarkable top-heavy-looking birds always attract attention in zoological collections, whether of living or stuffed birds, though they are almost unknown in private aviculture, for which their usually large size renders them unsuitable. They are often confounded with the Toucans of America, but belong to a quite different family, and may always be easily distinguished by having three toes in front and one behind, as in most birds; for in the Toucans the toes are in two pairs, as in Woodpeckers and Parrots. Other notable differences are that Toucans have a long tongue with fringed edges, and Hornbills a very short, plain-edged one, while Toucans never have the curious top-storey arrangement on the bill which is seen in most Hornbills.

Both in Toucans and in Hornbills the bill is really far lighter than it looks, the bony interior being of a spongy texture, while the horny casque surmounting the bill in the latter family is quite hollow, except in one species, the Solid-casqued Hornbill (*Rhinoplax vigil*), in which the front of it is solid. The use of this curious adornment is unknown, the best suggestion I have heard being one made to me years ago by a missionary in East Africa, that it may serve as a resonator to increase the power of the voice, which is very loud in these birds. Fledglings have not this growth on the beak, and the whole bill in them is smaller than in adults.

DIVISIONS OF THE FAMILY.

The Hornbills fall into two groups, the Ground Hornbills and the Tree Hornbills; the former, of which there are only two species, are confined to Africa. These are both large birds, about the size of Turkeys, with, as the photograph shows, fairly developed legs. These are ground-birds and animal feeders, walking about in search of such prey as snakes and other reptiles, and insects. They roost, however, on trees, and build their nests there, making them of sticks in quite an ordinary way.

Both these species are black, with white flights, and chiefly differ in that the North-African species has the "horn," or casque, open in front, while it is closed in the Southern kind. It is the Northern species (*Bucorax abyssinicus*) which is illustrated, the photo having been taken from a female specimen. In this sex the skin round the eye and on the throat is blue, while in the male the throat is mostly red.

THE TREE HORNBILLS.

All the other Hornbills, numbering about sixty species, belong to this section, and they range from Africa, through South-East Asia, to New Guinea. They vary much in size, from that of a Turkey to that of a Jay, but all have

very short legs, as the photographs of these Hornbills show, and when they come to the ground, a practice few of them indulge in in the wild state, they hop about instead of walking, a habit which has a very absurd appearance in a bird so big as they usually are. These tree-haunting Hornbills are mainly fruit-eaters, their long necks and bills giving them a reach for picking the fruit, which compensates for their weight and awkward build; but they do not despise animal food, being greedy devourers of any small creatures they can snap up.

Voluntary Imprisonment.

Their very curious breeding habits have long attracted attention. They lay in holes in trees, making no nest, and walling up the entrance hole of the cell with a plaster of mud and dung; sometimes the hen inside does the plastering with her own droppings, using her bill as a trowel, and sometimes the male helps her from outside. In any case, once in, she stays there till the eggs are hatched and the young reared, being fed through a slit left in the plaster by the male; this individual often disgorges the food in pellets cased in a gelatine coat secreted by his stomach, and is at times assisted by bachelor friends.

The hen in some cases improves the occasion by moulting her flights and tail; no doubt imprisonment in the hot, stuffy hole forces a moult. But even if full-feathered, she is very stiff if taken out, and almost helpless for a time. The object of this proceeding is defence against monkeys, tree-civets, and other predatory animals, since the birds require a good big nesting-hole and cannot be particular about the site. The small slit is easily guarded by the hen's powerful bill, and her loud note is well calculated to give warning to her mate to come and help her.

Affectionate Pets.

As may be inferred from these domestic arrangements, Hornbills are very affectionate birds, and they are quite ready to show their warm-hearted nature to their owners, that is, if hand-reared, as most of those seen in captivity have been. They love to be stroked and tickled, and will follow one about, so that they could be left at large with their wings intact if in a safe place. They are easily fed, as they will eat anything, a mixture of raw meat, chopped, hard-boiled egg, boiled rice and vegetables, with plenty of fruit, suiting them well. They very rarely drink, and do not usually care about bathing. They are usually kept warm in winter, and, being thinly feathered and rather sluggish birds, should not be rashly exposed to bad weather, though vigorous specimens in

good feather might perhaps be wintered without heat in a large space where they could fly about freely.

Bad Moulters.

For some reason or other they are very apt to moult badly in captivity in England, the flights and tail-quills coming deformed or not at all. In the East this does not seem to occur, except in the case of the Pied Hornbill (*Anthracoceros malabaricus*), which we could not keep in good condition, even in Calcutta, in the same indoor aviary in which other species kept in perfect plumage, and I do not understand the reason of this at all. The fact, however, that one species proved a bad moult even in India seems to show that the cause of the bad moult lies in some constitutional weakness, probably inherent in the Pied Hornbill, and induced over here by the cold climate in the others. Hornbills, I may mention, have never bred in captivity anywhere, so far as I know.

African Hornbills.

Two of the African species most frequently imported are the Elate (*Ceratogymna elata*) and the Black (*Ceratogymna atrata*), and the photographs are taken from specimens now living. It will be observed that they differ strikingly in the form of the horn, this being narrow in the former and thick and rounded in the latter. The Elate Hornbill also has a loose blue wattle on the throat which is less developed in the other. Both are mainly black in plumage, but the hens have chestnut heads. The smallest Hornbill I have seen in captivity was an African species, the Red-billed (*Tockus erythrorhynchus*), a brown bird about as big as a Magpie, with no horn on the bill. I have seen these birds actually eating canary seed, cracking it with their great beaks, and jerking it down their throats!

A Rare Bird.

The Subcylindrical Hornbill (*Bycanistes subcylindricus*) is one of the rarest birds known,

the present specimen being only the second or third ever recorded. The first, like the present, lived at the Zoo. It also comes from West Africa, and is rather small for a Hornbill, being slightly less in size than the Elate. Its colours are sufficiently shown by the photo, being merely black and white, with some grey on the head.

Some Asiatic Species.

The largest and finest of all Hornbills is the Concave-casqued (*Dichoceros bicornis*), of which a pair are represented, although the hen, poor thing, is very much out of condition, having neither flights nor tail. In this bird the plumage is pied, and the casque very broad and concave on top, while there is a curious sex difference in the colour of the eyes, those of the male being red, while the female's are white. I once saw quite a nestling of this species in Calcutta; it was about as big as a duck, and only feathered on the head, wings, and tail, the bare skin of the body being of a purplish blue. This bird is found both in India (especially in the lower Himalayan forests), and in the Malayan countries, the mountain specimens being the largest birds, and reaching over four feet in length.

The Malayan Wreathed Hornbill (*Rhytidoceros plicatus*) is also one of the large species, and, like several others, has a bill of somewhat brittle texture, so that it gets chipped at the edges. This bird ranges from Assam to Borneo, and, it will be seen, has a curious flat grooved horn; it also displays a remarkable sexual difference, the hen being nearly all black with a bright blue bag on the throat, while the cock has a chestnut-and-cream-coloured head, with a bright yellow throat-pouch. Generally speaking, however, there is but little sexual difference in this quaint and interesting family, but it is remarkable that several Asiatic Hornbills have reddish-brown heads in the males, and black ones in the females, while in at least two African species, as we have seen, the difference is the other way.

FRANK FINN.



Nest of Robin.

Nest of Tree Pipit.

Photos by Mrs. J. New.

A Goldfinch-Bullfinch Hybrid.



The Hybrid resulting from the mating of the male goldfinch and the female bullfinch is reckoned one of the most fascinating of all the many examples of hybridism which the skill of fanciers has succeeded in producing. Its plumage shows a happy blending, gorgeous yet artistic, of the distinctive features of both parents.

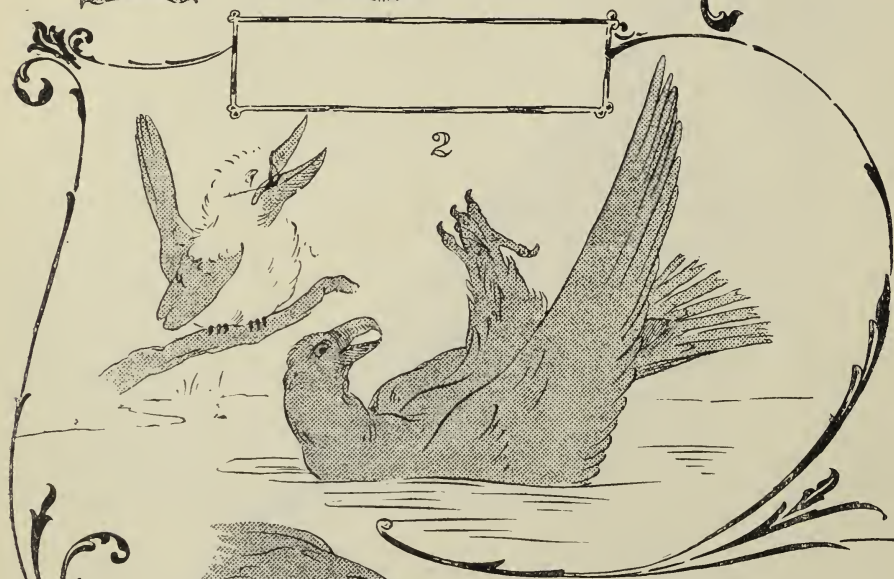
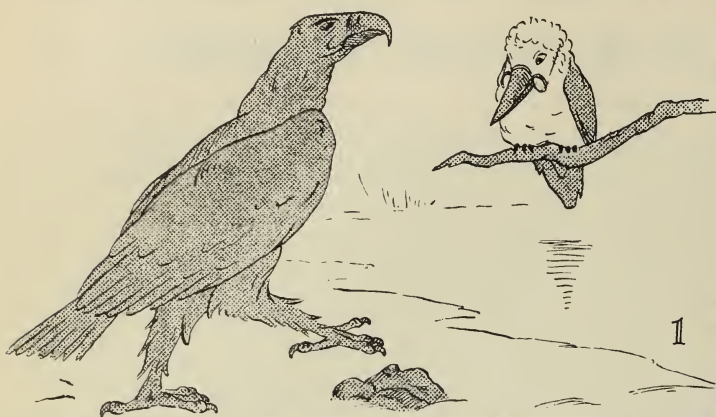
Another Case of "Lese Majeste."

1. King Eagle, intent on extending his sphere of influence, did not look where he was going, and Professor Laughing Kingfisher did not think it his business to warn him.

2. Indeed, he was sardonically amused at the collapse of such high pretensions.

3. The subsequent interview seems to have been stormy.

4. But His Majesty has undoubtedly assimilated a lot of information.



4

W.B.

"Cockie."

By MISS DYDDGU HAMILTON.

I am a patient, law-abiding citizen, so much so, indeed, that rather than turn active, or even passive resister, I have for years past paid double education rates, and submitted myself to re-vaccination no less than seven times during the late small-pox scares. Even now I sit placidly writing by dim candle light while our all-powerful Borough Council, attempting to "convert" the electric current, succeeds only, judging by the profane language I hear, in *unconverting* the ratepayers of this district.

COCKIE AND THE I. R. D.

When, therefore, some few months ago my servant announced that a young man from the Inland Revenue Department had called for the third time about the licence, and that he threatened to "take proceedings" immediately if I declined to see him, reluctantly I took my feet off the fender and descended to the front door, where awaited me a meek-looking young man, hat in hand.

"Dog licences should be taken out on the 1st of January," were the unexpected words with which he greeted me.

"Indeed!" I answered vaguely, wondering what he could be driving at.

"It is now the 23rd of March," he continued, eyeing me sternly.

"I believe so," I said, after a hasty glance at the newspaper I held.

"And you have no dog licence," he pursued, looking at me, as I thought, more and more threateningly.

"Why should I have one? I am not a dog," I replied, beginning to wonder where this peculiar young man had escaped from.

"But you keep a dog, and——"

"Not since I left Taviton Street three years ago," I hastened to assure him. "My dog died there, and he is buried in the garden."

The Officer of Excise smiled an incredulous smile as he observed: "Dead dogs don't bark."

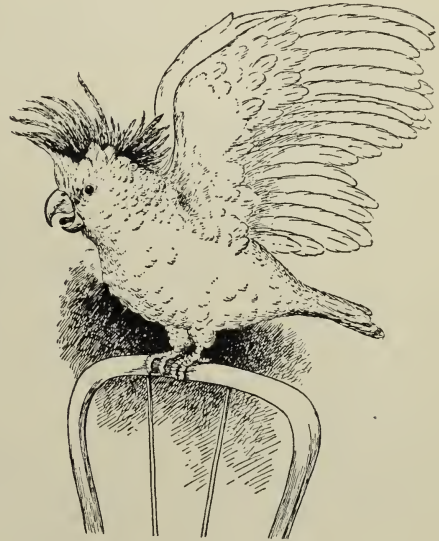
"No, indeed—at least, I have never heard one," I answered as soothingly as I knew how, for by this time I felt sure that the poor man's brain had been turned by the death of some favourite dog, whose spookish bark still haunted him.

But my remark had no soothing effect. On the contrary, the meek youth's eyes positively flashed as he went on: "The constable on duty here tells me that he constantly hears a dog barking in this house both by day and night. The penalty for not taking out a licence is £5, and if——"

THE MEMBER FOR BARKSHIRE.

But, as he raised his voice in anger, he was interrupted. Bow wow wow, bow wow—such a fierce and noisy barking, and only too obvi-

ously proceeding from my dining-room. With an air of triumph the irate Inland Revenue officer pushed open the door and looked in, whilst I, grasping the true inwardness of the situation at last, sank down on the stairs, over-



"Cockie" barking at the Officer of Excise.

come with laughter. For the supposed dog, whose unlicensed barking had caused such commotion at Somerset House, was no less a person than "Cockie," a large white cockatoo, whose powers of talking and imitation are quite remarkable even in a bird of his talented kind.

The Greater Sulphur-crested Cockatoo is a native of Australia. He is a bird of great wings and strong flight, and, as one saith, "he hath the voice of a fiend, for he hath an horrible voice." That is when he gives vent to his natural yells and screams, or to the imitation of railway whistles and motor hooters, at which feats he is an adept. Otherwise he speaks in a more human, less Punch-and-Judy-like voice than that of either the Gray parrot or the Green—his chief rivals in popular favour. The Gray parrot excels the cockatoo in the number and variety of the sentences he can remember and repeat, while the Green Amazon beats him at laughing, crying, and the mimicking of conversations between two different persons—a man and woman, or woman and child, the bird speaking in the voice of each alternately. The cockatoo is more playful, more intelligent, and much more excitable than any parrot.

NOT LOVED AT HOME.

In his own country the Great Sulphur Crest is an outlaw, and is granted no protection, not even in the breeding season, on account of the terrible havoc he commits among the crops of maize, which he devours with equal gusto whether it be freshly sown and sprouting or ripening in the ear. He is a bird very commonly seen in England. Being beautiful, hardy, and long-lived, he is largely and frequently imported, and is therefore cheap. But the great number of these birds presented by their owners to the Zoological Gardens and other public institutions testifies to the fact that they are found to be too big and far too noisy to be kept as pets in private dwelling-houses.

Cockie was never really my bird, though he lived in my house for over a year, and when I first saw him I thought that not even a white-robed angel could appear more glorious to look upon than this snowy beauty. However, I was not very long in discovering that if he did indeed bear any relation to an angel it could only be to a fallen one, though for many weeks his doting mistress could see no fault in him, and would hear no word against him, so that I had to bear my sorrows in silence.

Cockie began his misdeeds on the Sunday after his arrival. With his huge and powerful beak he forcibly bent apart the iron bars of his cage, and twisted and tore them out until he had made a space large enough to squeeze his great body through. Then, with a shriek, and a hideous burst of laughter, he flew round and round the room, finally alighting on the chandelier, from whence he sent down showers of black dust upon the spotless cloth and smoking joint. In vain we tried to remove him. "J'y suis, j'y reste," he proclaimed with beak and claws. There was nothing for it but to wheel the dinner table through the folding doors into the next room, leaving Cockie in possession of his coign of vantage.

At length a practised hand succeeded in catching him, and in tethering him by the leg to a stand, and then, for a while, we had peace. Cockie preferred the stand to his old cage, and on it he performed the most wonderful gymnastics and dances, spreading his great white wings and waltzing round as gracefully as any skirt dancer, or twirling head over heels round the perch with amazing rapidity.

A SENSE OF HUMOUR.

It is a moot point whether parrots and their kind understand the meaning of the phrases they repeat. I have no doubt whatever that Cockie comprehended the drift of *his* remarks, and that he had a keen sense of humour. On one occasion, when an enthusiastic advocate of teetotalism had been holding forth to me for a somewhat lengthy period, and I had begun to fear that I should soon be unable any longer to stifle the yawn I felt imminent, Cockie, who, contrary to his usual custom, had been very still

during the interview, suddenly called out, in tones clear and distinct as those of the human voice: "Good-bye; I must be off now to the public-house—the public-house." He repeated the last words twice over, so that there could be no shadow of doubt as to what he said. Never, before nor since, has he been known to pronounce those words.

When the chimney caught fire in the room where Cockie's cage stood, the roar of the draught, and the blazing masses of soot falling on to the tiled hearth, terrified Cockie, and he ran up and down his cage, calling out, "What's the matter? What's the matter? What is it all about?"

On another occasion I had had an urgent call to an outside case in the hours when I should have been found in my own consulting-room. On my return, my housekeeper—a kindly old soul, who had taken a warm interest in all my doings ever since the days of my early struggles—met me at the threshold with the good news that there were two new patients in the waiting-room. "The lady came about half an hour ago, that's her brougham opposite; the gentleman drove up in a hansom ten minutes after."

"I will see the lady at once," I said, turning the knob and entering the room as I spoke.

LIBELLOUS COCKIE.

A smartly-dressed lady was looking at a volume of "Punch" on the table, while an elderly clergyman sat with an air of fixed melancholy, gazing into the fire. At the noise of my entry Cockie faced round, and, instead of his usual greeting of "Hulloa!" the malicious bird, inspired, as I cannot but believe, by the Evil One himself, announced in a voice of startling distinctness, ending with a diabolic chuckle, "They've been kissing. Ha, ha!"

I stepped back hastily and closed the door.



The Hon. Mrs. Howard's Amazon Parrot "Polly."



The Monarch of the Glen.

Little Bird Friends.

A HISTORY RELATED BY MISS H. B. RUTT FOR YOUNG BIRD LOVERS.

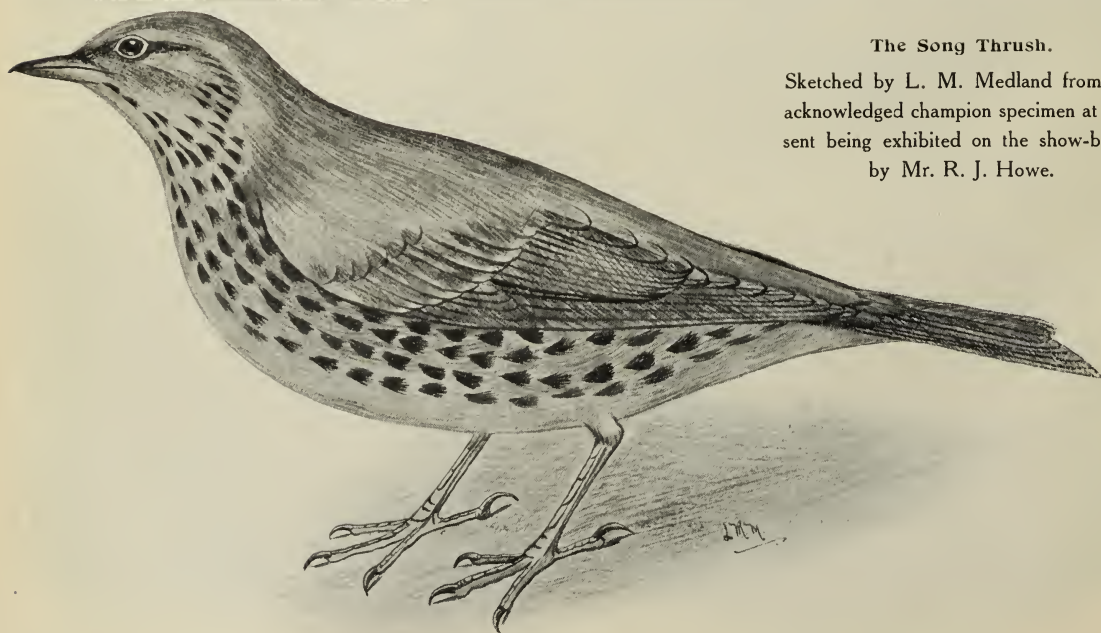
CHAPTER I.

CHATEAU CHEZ-LES-OISEAUX.

What is Château Chez-les-Oiseaux? Well, it is the name of the home where some of my little bird friends live, and I thought it would be nice for you to know what this is like before I tell you about the birds themselves. I know from experience that by far the greater number of birds prefer a large cage, even if shared by others, to a small one all to themselves. Sometimes the other people in the cage are not as pleasant as they might be—one cannot always get the best roosting-place, nor the pick of any special dainties; but still, from a bird's point of view, it is simply splendid to be able to stretch one's wings and get a good dashing flight from one end to the other, instead of only being able to jump up—down, up—down, which is all that can be done in a small cage. I used to have canaries for my bird friends, then British birds, but now I have little foreigners, and in many ways I find them the most interesting. Their language is just as easily learnt. Oh, yes! I understand their language. You cannot really have a very intimate friendship with anyone unless you understand their language, and I and my birds are very great friends indeed. I had only six birds before I bought my

large cage, and when I had ordered it I told them about it, and how nice it would be. I don't think they quite understood me; I must confess they did not seem quite to grasp the idea. But when the day came that they were moved into their new home, there was no doubt as to their feelings. They were full of joy and gratitude.

I had the cage made on purpose for me at Boulogne, because in France they know how to make the best cages at a very moderate price. How pleased I was when at last the railway-van drew up at our house, and the men brought in a huge cage! It was packed in a crate, the same way as they pack a bicycle to prevent it being crushed, with a kind of wooden scaffolding all over it. It looked enormous as it stood in the hall. We were only women in the house, and it had to be taken up to the top floor. However, it was not so heavy as it looked, and we got it up very cleverly, as we thought, even lifting it over the banisters. But the door of the room was round a corner and we could not get it through. When we were quite exhausted we gave it up, left it in the passage and said: "We will get some men in the morning; they will be able to do it." So in the morning two strong men arrived. They struggled with the cage in all possible ways, and tried to overcome its obstinacy, but it would not go into the room.



The Song Thrush.

Sketched by L. M. Medland from the acknowledged champion specimen at present being exhibited on the show-bench by Mr. R. J. Howe.

They tried it upside down, endwise, sideways, but it was no good. At last they seemed to be trying to make it waltz in! But even that failed. What was to be done? Should I be obliged to send my beautiful cage back again to France? But the men turned to me. I think their hearts must have been full of pity, for I am sure my eyes were swimming with tears. A cheery voice said: "It's all right, mum, we'll have to take out the window, and haul it up from the outside." And so they did! First they carried it downstairs again, and out into the garden; then they removed the window-frame, tied ropes to the cage, and pulled it up. It was not hurt at all, and glad was I to see it safely in my room at last.

But why has it such a queer name? Ah! I must tell you about that. I was, of course, obliged to give the cage some name. It could not have a number, as it stands alone; it is not in a street. It is what the builders call a "detached residence." As it came from France I thought a French name would suit it best. "Château," as I dare say you know, means "Castle," or any fine, large mansion. "Chez-les-Oiseaux" means "where the birds live," or "the birds' home." So the whole name means something like "The large, beautiful Birds' Home."

The cage stands on a very low table, about two feet from the ground. The roof is a pointed one, and at the highest part is only a short distance from the ceiling. All the arrangements inside are most convenient, but I saw directly one alteration I should have to make. There were three large swings or trapezes hanging from the roof, and these I knew would be much liked, but elsewhere nothing but long, straight perches, all exactly alike. Objections would be

made to these, I felt sure. I had had talks with my birds on this subject before. They had said: "Do not you like a little variety? You walk on smooth pavement, rough, stony paths, soft grass, up and down hill, and change like this is pleasant to your feet. And we, too, like a change, and in our natural home in the trees are clinging first to a thick branch, then to the tiniest twig, our claws adapting themselves to all." I can quite see the sense of this, cannot you? So if you are obliged to keep your bird in a small cage with only two perches, let one be thick and the other thin, and he will thank you. I quickly took out nearly all the perches, leaving a clear, open space in the middle of the cage for flight. Then I fixed short bits of natural branches across the corners, up near the top, for quiet roosting places. Then I hung up six or eight small rush nests the shape of little barrels, open at one end for the small birds to sleep in at night, or to shelter in on cold days. Then all over the back of the cage I fixed branches, a few from dead trees, with very slim, little twigs indeed, and some green fir branches. They look so very pretty, and the birds love to hop in and out and frisk among the branches. But unfortunately the beautiful green effect is soon spoiled, as you will read when you come to the chapter about the "Clown." The seed is supplied to them in long drawers, little wooden roofs keeping it quite clean and wholesome. The floor is covered with sawdust, and sand given in a small wooden tray. This, as you know, all birds need to assist their digestion. Now you will be quite tired of this long description of Château Chez-les-Oiseaux, and want to know something of the twelve birds who live there.

To be continued.

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A WORD WITH THE PUBLISHER.

THE splendid reception accorded by the bird-loving public to the first number of "THE BIRD WORLD MAGAZINE" has more than satisfied the expectation of its promoter, and justified his belief in the need of such a publication.

With No. 2 we start a most interesting and instructive "serial" from the pen of that popular ornithological writer, W. P. Pycraft. Our cover this month, we think, will generally be conceded to be a distinct advance, and the cover for No. 3 is even still more striking. Of our frontispiece we will say nothing. It speaks for itself.

By recommending this Magazine to their bird-keeping friends, readers of it will confer a great favour upon the Publisher.

Advice about the ailments of birds and small sale or exchange advertisements of birds will be found in "Cage Birds," price One Penny, from any news-agent or bookstall.

Chirps and Chatter.

THE PORTRAIT ON THE COVER.

Few people will have any difficulty in recognising the bird outside our magazine, the Barn-owl, one of the most useful birds in the world, and certainly not among the least ornamental, with the beautiful blending of buff, black, white, and grey on its upper plumage. A full-length portrait will be found on the page devoted to owl photographs, which shows the bird as he appears when wide awake.

SOME LEADING OWLS.

On the same page are portrayed various conspicuous members of Owl society, both British and foreign; for the grand Eagle-owl, as remarked in our last number, comes on the British list as a straggler, and the Arctic Snowy Owl occurs more frequently. The Milky Eagle-owl of South Africa rivals the European Eagle-owl in size, but differs much in its grey plumage and dark eyes. It is a curious fact that among Owls quite nearly-allied species may differ in the colour of their irides, whereas in Hawks a dark or light eye may run through whole groups.

The Ural Owl is a European, though not a British bird. It is a large species, and sometimes produces a peculiar sooty-black variety.

OWLS AS FISHERS.

An owl, somehow, does not seem a likely bird to go a-fishing, yet our familiar Barn and Brown Owls occasionally take fish, and in warm climates in the Eastern Tropics there are Owls which are professional fishers. Such a one is Pel's Owl in the picture, and it will be observed that he is bare-legged, a strange feature in an Owl, but found in all these fishing species.

It is a curious fact that the Snowy Owl, with the most heavily-feathered feet of all, is also a fisher on occasion, but he is a bird that will turn his claws to anything. Flesh or fowl, or even carrion, contribute to his food, and he hunts either by day or by night. The present specimen was bred in an aviary in England, but this species is not nearly so easy to keep and breed as the Eagle-Owl.

NEVER TOO LATE TO MEND.

A correspondent of "Cage Birds" recently procured a Tiercel (male) Peregrine Falcon with its flights so broken that it could hardly fly. It is worth knowing that a Hawk, or, for that matter, any other good-sized bird in this condition, can be made as good as new by the process known as "imping" by falconers. One needs to be provided with feathers, corresponding to the broken flights, obtained from another bird of the same species, and with some "imping needles," which have a point at each end. Then the broken feather and the substitute must be cut at an angle so as to fit accurately, and the ends of the needle—previously dipped in brine to make it rust and thereby hold the better—be thrust into the stump and the piece of new feather till these meet. A properly impinged feather will be as strong and last as well as a natural one.

BREEDING OF THE PINE GROSBEEK.

Mr. W. H. St. Quintin, in the December number of the *Avicultural Magazine*, relates his successful breeding of the Pine Grosbeak in an aviary. Cur-

iously enough, the single hen bird, confined with three males, chose one with a stiff wing. He, however, proved well able to keep all intruders away from the nest. The young—two in number—were reared, at first, at all events, on fresh ants' cocoons and other insects, the old birds showing that tameness which is so characteristic of this handsome finch. Mr. St. Quintin is of opinion that too much oily seed is bad for these birds, and makes their usual diet a variety of small seeds, with berries, apple and larch or hawthorn branches as green foods.

BLUE-TITS BARRED.

It is interesting to read in the "Five Years' Retrospect of Game Protection," published by the United States Department of Agriculture, that during this time fifteen specimens of the Blue-tit—called in the report by its German name, "Blau-meise"—were refused admission to the States, along with such beasts as the bloodthirsty mongoose and the fruit-destroying flying-fox. Their too successful experiment with what they persist in calling the "English" sparrow has evidently thoroughly frightened our friends across the water, although it has never been proved that any introduced bird has extirpated a native one anywhere; and, after all, just as many native animals have become pests in their own countries as have imported aliens.

A TELL-TALE TOURACOU.

There has lately been received at the Zoo a bird which is heartily detested by big game hunters in South Africa, the Go-way bird, or Grey Touracou (*Schizorhis concolor*). This public-spirited creature has a habit of flying across the veldt from one tree to another when someone is stalking antelope or what not, crying out "Go-way," a suggestion which the animals concerned promptly act upon. Those readers of the BIRD WORLD who go often to shows or the Zoo know very well what a Touracou is like, but they will also know it as a beautiful green and purple bird, whereas this species, now imported into England for the first time, is of a plain slate colour, although very graceful in form. The birds in the Western Aviary, however, did not at all like the look of it; it seemed to strike them as a kind of hawk.

TWO NEW BRITISH BIRDS.

At a recent meeting (November 21st) of the British Ornithologists' Club, Mr. Eagle Clarke, of the Edinburgh Museum, exhibited specimens of the Red-rumped Swallow (*Hirundo rufula*) and the Siberian Chiffchaff (*Phylloscopus tristis*), the first recorded in British limits. The Swallow is a very distinct and handsome species, with a chestnut collar and patch on the lower back, and with the under-surface creamy white, with fine black streaks. It builds a curious flask-shaped nest, and does not usually range west of Italy. The Siberian Chiffchaff is an insignificant-looking little bird, smaller and duller than our species, having less yellow tint in its plumage. It appears, however, to have more vocal power, having a loud song. Its natural home is in the east of Europe, as well as in Siberia. This bird was procured at Suliskerry, and the Swallow at Fair Isle.

FEMININE TALENT.

One hears a great deal about the practice of selling hen canaries as cocks, but it really seems as if there are a good many birds of the gentler sex about whose vocal abilities are enough to deceive anybody. I know one myself at present, a proved hen, which has laid one egg last spring and built any number of nests; and yet she sings as well as any ordinary cock bird, in good German style, and by day and night.

I heard of another, now living, which laid fifteen eggs during the past season, and when she was not doing this sang perfectly well. Yet another, deceased in the very act of singing some time back, is said to have not only laid eggs but hatched them, though she wasted so much time in music that the young were not reared. The suffragette movement seems to be even infecting our cage birds.

A CHANCE FOR BREEDERS.

Surely, however, these singing hens ought to be taken up seriously. Even if they often lay poorly and are bad mothers, other hens could be entrusted with the young, and a strain of canaries all of which could be guaranteed songsters would be a profitable possession, for as long as a bird sings the ordinary purchaser does not care about the sex at all; in fact, the two birds I mentioned above are highly valued by their owners.

THE SCARLET Tanager.

Now that the young of Black Tanagers have been successfully reared in an English aviary, and partial success attained with the Scarlet Tanager, the following notes culled from "Bird Lore" about a different species of Red Tanager, from North America, will doubtless interest many readers. According to Audubon, this bird is susceptible to cold, and he says that, in the State of Massachusetts, should a sudden change of weather take place during their spring migrations, hundreds die in a single night, not only in the woods and orchards, but also in the towns and villages. It nests in the deep woods; the nest is a frail, cup-shaped structure built on to the extremity of an overhanging limb. The clutch varies from three to five, greenish in colour, and much spotted with brown and purple. It bears a good reputation for song, Mr. W. Dutcher classing it as one of their best song birds. It feeds on insects and wild fruits. The richly-dressed male is subject to many changes. In the nest it has natal down, which is followed by the juvenile plumage; this is followed by the first winter plumage, very similar to the permanent plumage of the female. In the spring the bird assumes its first nuptial plumage of scarlet vermillion. Out of colour the male may be distinguished from the female by its jet black wings. The Brazilian species of these beautiful birds have been wintered out-of-doors in an English aviary, to which a well-lighted shelter shed was attached. If a constant supply of live insects could be kept up there is no reason why they should not be successfully bred in a shrubby outdoor aviary.

WILD CANARIES IN ENGLAND.

Only recently I had the privilege of seeing no less than three dozen of these birds at a dealer's; an interesting sight, since the wild originals of any of our tame birds (except the common duck) are

really rarely to be seen. This is, of course, because no one wants birds which domestication has rendered so familiar, and is especially the case with a bird which man has improved so much as he has done the canary. The canaries which now and then turn up wild in England, although green like the genuine wild birds, are not likely to be escaped specimens of these, since wild ones are so seldom imported; probably they are escaped green tame birds, or the offspring of such, which have bred in a state of freedom, for some escaped canaries manage to survive.

RAVAGES BY ROBINS REFUTED.

In the "Scotsman" for Dec. 22nd, J. L. R. very properly points out that the "robin" in a paragraph recently quoted there—"Robins steal fruit with a vengeance, and many an eastern farmer has been near distraction because of the ravages of these birds"—is the American bird, a species of thrush (*Turdus migratorius*). What the thrush tribe can do in the way of devouring fruit is well enough known over here, but it is hard that the harmless redbreast's character should suffer by the publication of his American counterfeit's frugivorous behaviour.

AMERICAN BIRD NAMES.

It must always be borne in mind that the names of many familiar British birds were transferred by our countrymen, when colonizing America, to very different species. Thus, the American "Black-bird" and "Meadow-lark" are Troupials; their "Goldfinch" is a kind of Siskin; and their "Sparrow-hawk" a kind of Kestrel; their "Sheldrake" is our Red-breasted Merganser, a very different duck; and their "Yellow-hammer" is a kind of Woodpecker, oftener known as the Flicker.

COMMON GULLS IN LONDON.

The Gull common in London at this time of year is the small Black-headed Gull, though at this season its head has hardly any of the dark colour; but the large Herring-Gull has also been not uncommon for the past few years. Only the other day, however, I noted for the first time specimens of the Common Gull—a species which is not anything like so common as the other two, in spite of its name, and much resembles the first in size and the last in colour.

TWO RECENTLY DECEASED AVICULTURISTS.

Dr. W. T. Greene's article on the Heron in this issue has a peculiar and melancholy interest, from the fact of the recent sudden decease of the writer. He had always taken a keen interest in the progress of "Cage-birds," and his memory will be ever green among aviculturists as one of the pioneers of avicultural teaching, especially in the foreign bird section; it is doubtful if any writer has done so much to popularise foreign bird keeping here.

Another recent and lamented decease is that of Mrs. Abrahams, widow of that very well-known dealer and keen and discriminating aviculturist, the late J. Abrahams, of St. George's Street East. Mrs. Abraham's health had been failing for some time, and just before her death she had given up the business she had kept on since the decease of her husband.

Pet Birds and Royalty.

By PRINCESS HELENE VACARESCO.

Modern royalty loves animals, while it seems that royalty of bygone years had rarely anything to do with them. Dogs, horses, monkeys, squirrels, are among the favourites of kings, queens, princesses, and grand-duchesses; while the archduchesses of the imperial family of Austria have a great liking for tame deer and wild roes. Birds are more rarely spoken of in the annals of court life, though they sometimes play a conspicuous part in the intimate existence of the wives and children of present potentates. For instance, the young Princess Victoria Louisa of Germany, only daughter of the Emperor of Germany, possesses a pet robin red-breast, whose cage never leaves the Princess's room. The bird is tame and recognises the voice of his august little mistress, and is tended by her alone.

A Pet Humming Bird.

Queen Elena of Italy had made a present to her daughter, Princess Yolanda, of a tiny *colibri* (humming bird), which soon became the darling of the whole nursery, and whose every movement afforded the young children of the Italian crown the most vivid pleasure. But soon the beloved bird began to pine, and looked so ill that the Queen was called to give her advice in the trying matter. Alas! the court veterinary himself proved helpless, and the *colibri* died. The late Empress of Germany, Kaiserin Augusta, wife of the first German Emperor, delighted in the society of birds, and spent hours watching them as they sang or moved about the big cage in which she had assembled them by hundreds.

An Empress's Favourite Book.

So great was her passion for birds that she ever declared the best book she had ever read was the famous volume (in French) by Michelet, called *l'Oiseau* ("The Bird"), which is perhaps the most lovely poem ever written to the glorification of birds. This book the Empress never travelled without. But of all the living monarchs who have to do with the feathered tribe the Queen of Roumania is the most devoted to their welfare and most attentive to their habits.

A Royal Reader of Character.

From her early childhood the future Queen and poetess became attached to every little bird that came into her way, and she often relates with a smile that one of the reasons for which she immediately acknowledged the suit of the King, then Prince of Hohenzollern, was that she discovered he greatly resembled a young eagle. In all her friends the Queen of Roumania likes to discover some likeness to a bird, and judges their character accordingly. "You are exactly like a bullfinch, my dear child," said she one day to a young maid of honour; "you must be

gay, strong, and greedy," and the circumstances showed the Queen had not been mistaken in her appreciation of the girl's moods and habits.

Parrots and birds decked with gaudy plumage are especially attractive to Carmen Sylva, yet she possessed a tame sparrow and admired his simple coat, while she wept because a blind nightingale was brought to her, and called him "my dear little Homer." The nightingale had learnt to watch for the Queen's entrance into a room, and knew the rustling of her heavy train, never making a mistake between Her Majesty and any other lady.

A Prelate's Parrots.

The head of the Roumanian church, a wealthy and clever metropolite, possessed quite a collection of beautiful parrots, whose lively prattle and admirable colours struck the Queen on a visit she paid to his Holiness. She had forgotten all about the parrots when, at the metropolite's death, great was her astonishment to hear the birds had been entrusted to her care by the will of the deceased. At first the Queen felt aghast at the prospect, but she had not the courage to refuse the birds, and soon the palace at Sinaia, the Queen's summer residence, was full of the clamour caused by thirty parrots.

The King declared the sound obnoxious, and made long tours to avoid the verandah where the parrots conversed together, so they had to be removed to a more remote corner, but still the deafening din reached all the inmates of the big castle; but as everyone noticed the Queen disliked any reference to the nuisance, the birds had to be put up with, and they delighted all the children who visited the royal palace, which shows, said the Queen, how useful they can prove.

A Melancholy Macaw.

One of the Queen's greatest pets, a lovely Brazilian parrot, who remained obstinately speechless for several years, though he had spoken very well while in his native country, proved a great disappointment to Carmen Sylva. She called him "the unhappy beauty," and spent hours trying to get a sign of affection or recognition from the haughty and peerless bird. But a soul of undaunted hatred dwelt in the charming form of the Brazilian parrot. He pined after the forests of the New World, after liberty and sunlight, and, like Rachel, he would not be consoled. With a kind of frenzy he tried to bite whenever an indiscreet finger advanced through the grate of his gilded cage, and he turned his back on every visitor the Queen brought to admire him. Thus the Prince of Wales (now King Edward the Seventh), the Archduke Carl Ludwig of Austria, the Empress

Elizabeth, the Crown Prince of Saxony, and the present King of Italy were treated with the same rudeness by the obdurate bird, whose blue and salmon-coloured plumage they all admired.

Understood at Last.

After a few years of mute captivity, one fine morning the parrot muttered a guttural sound followed by syllables in an unknown tongue, which the Queen, who is a linguist, discovered to be Portuguese. She immediately answered in that language. The parrot gave a shriek of joy, and his humour completely changed, but this happy state of events did not last long, as

he was found one day by the Queen stark dead in his gilded cage. Carmen Sylva shed warm tears of regret, and says the bird was her favourite and she had pitied him with all her heart. After the death of the Brazilian parrot the Queen became attached to a bullfinch called Karl, which belonged to one of her ladies, and in whose honour she wrote a small poem which is supposed to be composed by the bullfinch for his own usage.

On the balcony of her apartments in Castel Pelesch at Sinaia the Queen deposits crumbs of bread, and every morning the sparrows are there in thousands to greet her in loud tones. The Queen of Roumania is a real bird-lover.

The Waders' Aviary at the Zoo.

Although the most popular aviary with most patrons of the Regent's Park Gardens is that in which the Parrot tribe disport themselves, the small and beautifully-arranged aviary devoted to our small British waders and other British birds is nearly as much appreciated; the accompanying view gives a good idea of it.

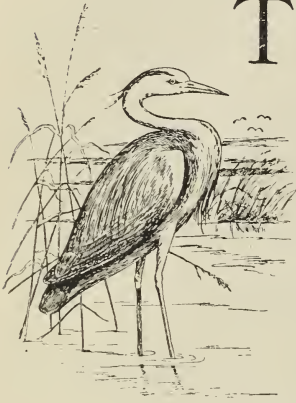


The Waders' Aviary at the Zoo with some of its inhabitants.

Pied Wagtail, Kingfisher, Oyster-catcher, Lapwing, Ruff, Avocets, Swallow.

The Heron.

By the late W. T. GREENE, M.A., F.Z.S., Etc.



THE leaden-blue colour of the heron is not particularly gay or attractive-looking, nor does the configuration of the bird greatly commend it to the notice of amateurs endowed with æsthetic tastes, for the long legs and neck of the heron seem out of proportion to the short, round body, especially when the neck is retracted between the shoulders and the bird is standing in its favourite position, on one leg, by the side of a pond or stream, on the look-out for fish; these constitute its favourite food, though it is not above making a meal of any unfortunate batrachian, or even snail, that happens to fall in its way when the evening shadows are falling fast and no more dainty morsel has come in its way.

EVER ON THE ALERT.

A stupid, heavy-looking bird, the heron is really not such a fool as he seems, for he is ever on the alert, chiefly, it is true, for something to eat, and although his prey is proverbially slippery, he seldom misses it when he darts his long bill out from between his shoulders, but grasps it firmly in his mandibles, gives the fish a fatal squeeze, tosses it into the air, and swallows it without further ado, almost before the victim has had time to realise what has happened. The heron, for all its long legs, makes its nest like a rook amongst the topmost branches of some lofty tree. Also like the rook, the heron builds in company; but such nesting places, heronries they are called, are not numerous in Great Britain nowadays, though at one time, when the heron was in request for falconry, there were many of them scattered about throughout the length and breadth of the land.

As it utterly spoils the appearance of a bird to clip the feathers of one or both its wings,

and as the heron would absolutely decline to remain in any given place not of its own selection, any enclosure to which the heron is to be confined must be covered over to keep the bird from flying away, and perhaps the best material for the purpose is netting that has been discarded by fishermen, for when the birds fly up, as they are very apt to do, and strike their heads against it, they will not hurt themselves as they would against wire.

A FISHY CHARACTER.

The heron has a decidedly bad name with the angling and fish-preserving members of the community, and as it is a large bird and has a considerable appetite, being able, it is said, to dispose of two pounds weight of fish at a sitting, the complaint has more ground on which to rest than happens in most cases of the kind. At the same time, especially now that its numbers have been so much reduced, it is doubtful if it is really as harmful to piscatorial interests as it is asserted to be.

A friend of live creatures of all kinds, who resided near Epping Forest a few years ago, had a large glass aquarium under his dining-room window, and in this he was in the habit of keeping goldfish. The tank was uncovered, and its owner, after a time, began to notice that some of the fish were missing, and cats were blamed for the theft. One morning, however, the gardener happened to arrive upon the premises rather earlier than usual, and to his surprise saw a large "grey bird," as he described it, deliberately picking fish out of the tank and swallowing them at his leisure. The gardener rushed forward and the marauder bolted, but, being heavily laden with the fish he had stolen from the aquarium, the heron could not immediately rise into the air, but ran along the garden path flapping its wings frantically for some seconds before it was able to ascend, and narrowly escaped being captured.

As the tom-tit will discover the seeds of the sunflower wherever they are grown, so the heron will spy and, if he can, will help himself to any fish he may perceive, and if one of these latter birds is known to be in the neighbourhood, it will be as well for the owners of goldfish to protect them by covering the tank or pond they inhabit with wire-netting.



The Yellow Wagtail.



The Yellow Wagtail (*Motacilla flava*).

The Yellow Wagtail, one of the most brilliantly-coloured of our British birds, differs from both our other common Wagtails, the Grey and the Pied, by being a summer visitant only. It especially frequents marshy meadow-land, where the rich yellow of its underparts vies with the buttercups. The upper plumage is olive-green. These fine colours are only seen in perfection in the male in summer; in winter he becomes duller, as the hen always is. The young are drab and buff, without any bright hues. Their shorter tails will, however, always distinguish them from our other Wagtails. This species is pre-eminently a Western one, wintering in Africa, and not going east of Western Asia; the Eastern representative of this group of Wagtails being the Blue-Headed Wagtail (*Motacilla flava*), which is only an occasional visitant with us.

A Champion Exhibitor.

Mr. Charles T. Maxwell Interviewed.

By JOHN FROSTICK.

The name of Maxwell is a household word amongst the cage-bird exhibitors of the United Kingdom, and well it may be, for he is undoubtedly one of the "champions" of the present time. To become a champion in any sphere of life requires grit, determination, perseverance, judgment and tact, and, in the case of a bird-lover, cash. Happily Mr. Chas. T. Maxwell is richly endowed with all these good gifts, and the result is—success. But there is one more faculty to name, and that a somewhat rare one among successful men, the faculty of making friends. Most eminent people generally count their enemies in proportion to their height on the ladder of fame, but I believe that our friend has the happy distinction of being without an enemy in the world.

During the hundreds of visits I have paid to Mr. Maxwell's aviaries I have often thought what a pity it was so few could enjoy with their own eyes the pleasures of such a visit,

although by his kind invitation many have done so. Therefore, in this imperfect form, I am going to try and convey some idea of the man they know by repute, and of the incomparable collection of British and Hybrid birds (numbering some 80) he has gathered together at his home in Acre Lane, Brixton. Without the aid of my friend, Mr. Palmer, of Tooting, who, as his pictures show, is an expert amateur photographer, I am afraid my endeavours would be of poor service, but with his help we will do our best

A YOUTHFUL FANCIER.

Mr. Maxwell, like the majority of fanciers, was, as it were, born with the love of keeping animals of all kinds, and, like many others of similar tendencies, did not always devote his time to cage birds, for when only five years of age he had a donkey presented to him, which would have satisfied most children. But his strong fancier instincts impelled him to start breeding and training these useful animals on



Mr. Maxwell, of Brixton, by his Aviary



One of Mr. Maxwell's Aviaries.

a small scale, until school and other circumstances prevented him from following up what might have ended in a racing stud. After the donkeys had been disposed of, he turned his attention to rabbits. Lops were his first fancy, and then Belgian Hares; these last he bred from a utilitarian point of view, but then one cannot live on rabbits for ever, and in the end they were replaced by fowls—Buff Orpingtons and White Wyandottes claiming his attention, the latter variety of which he still keeps. Variety Bantams also, in their time, shared his attentions, and he kept several kinds with considerable success.

Generally, Mr. Maxwell keeps a dog about the place, for company, and to protect the birds from cats and other possible intruders; in every case they have been animals of the highest pedigree—terriers, bulldogs and Great Danes being the breeds favoured. About the year 1890 he was smitten with the "bird fever," and got together a stud of Norwich Crests, Plainheads and Lizards; with one of the latter he obtained his first award at the Palace—a fifth or sixth prize; but it was not until five or six years later that he achieved much success. By this time he had relinquished the canary fancies for foreign and British birds, with the results well known to the majority of present-day fanciers.

For a year or two he was absolutely invinci-

ble in the foreign bird section, and during the whole time he exhibited them he kept his competitors busy; and, with the exception of Mr. Fulljames and Mr. Hawkins, probably no exhibitor of the past or present ever excelled him.

But the pace was too quick even for a man of his position, and with characteristic prudence he gracefully retired from that branch of the fancy, after having won the greatest laurels it was possible to get. Through his plucky purchases the public were enabled to see on the show bench for the first time such rare and valuable birds as the pair of Hawk-headed Parrots, Gang-Gang Cockatoos, Violet-eared Waxbills, Iris-coloured Parrot Finches, many species of rare Tanagers, and Sugar Birds. He also was the first exhibitor to own the unique Long-tailed Combassou, exhibited with such success by another exhibitor. Speaking of his experience with foreign birds, Mr. Maxwell laughingly remarked that if he had spent the money in bricks and mortar that he had expended on foreign birds he might have owned a good deal of property.

SUCCESS WITH SOFTBILLS.

Soon after I became acquainted with Mr. Maxwell I sold him one of those charming birds, a Blackcap, and little did I think then that I was starting him on a branch of the

fancy in which he was to achieve such success, for of all sorts of birds, the insectivorous kinds have always been, and are still, his strong point. I feel proud to have been his first tutor in the art of keeping soft-bills, in which he has long become a past master. The last time I called upon him he pointed out with pride a lovely Golden-crested Wren which he had just succeeded in bringing through the moult in beautiful order. This led me to ask what was the longest period he had ever kept a softbill. He replied that he had kept a Redstart for five years and that but for an accident it would probably have been alive double that time. The reason he has not kept any particular species for a longer time is either that during the several show seasons the birds gradually get "claimed" at the various exhibitions, or he has exchanged; but very rarely does he sell in the ordinary way.

Mr. Maxwell claims to be the first exhibitor to have shown the Blue-headed Wagtail, Reed Warbler, Grasshopper Warbler, White-headed Long-tailed Tit, and Lesser Spotted Woodpecker. It will be seen from this that he is fond of rarities, and he is ever anxious to add novelties to his collection at whatever cost. He is a generous buyer, but he must have the best. Of all the rarer and more difficult species with which he has tried his hand the Dipper is the

only kind he has not been successful with, and he is of opinion that they cannot be successfully kept in an ordinary cage. With a suitable outdoor aviary, in which a running brook and pool could be arranged, he is of opinion that there would be no difficulty, but water in abundance is absolutely necessary.

A LIST OF STOCK.

The following is a rough list of Mr. Maxwell's birds:—Song Thrush, Blackbird, Stonechat, Redstart, Black Redstart, Nightingales, Lesser Whitethroat, Blackcaps, Golden-crested Wren, Chiffchaff, Willow Wren, Reed Warblers, Tree Creeper, Grey Wagtails, Yellow Wagtail, Blue-headed Wagtails, Meadow Pipit, Red-backed Shrike, Chough, Jay, Magpie, Wryneck, Lesser Spotted Woodpecker, Greenfinches, Hawfinches, Goldfinches, Siskins, Chaffinches, Bramblefinch, Linnets, Lesser and Mealy Redpoles, Twites, Bullfinches, Yellow Bunting, Cirl-Bunting and Snow-Bunting; Hybrids—Linnet-Bullfinch, Goldfinch-Siskin, Goldfinch-Greenfinch, Twite-Canary, Greenfinch-Canary, Albino-Goldfinch; a goodly list which my readers will not be surprised to learn cost something like £30 per annum for their keep.

This leads us to the important item of food—its composition and method of use. A wrinkle from such an authority as Mr. Maxwell is

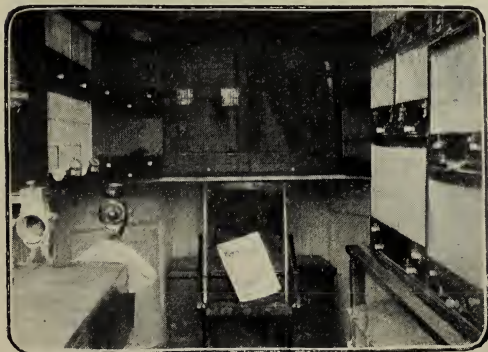


Another of Mr. Maxwell's Aviaries.

worth a great deal to professional and amateur alike. The mixture for insectivorous birds he makes as follows:—Ants' eggs (best quality only, fresh in season), dried flies, and Osborne biscuit (ground to powder), in equal parts, mixed crumbly moist with finely-chopped lettuce (note Mr. Maxwell uses lettuce all the year round); add to above a little finely-chopped cream cheese. Mr. Maxwell is a great advocate for the latter ingredient, which he has constantly used for the last eight years. It will be noticed in the above recipe that no mention is made of egg, fresh or otherwise. Mr. Maxwell has discarded it for some time past, and does not regret doing so. To the above diet he adds such live insects as are usually procurable, the chief being mealworms; fruits such as bananas and ripe pears to those species which partake of it, and in the moulting season colour food to such as are undoubtedly improved by its use. For the finches a mixture of hemp, teazle, linseed, niga and canary, the two former in the largest proportion for the Goldfinches; thistle and dandelion seeds are given occasionally as a treat. The Linnets, etc., have a larger proportion of canary and also a little German rape added. The Hawfinches revel in a portion of white sunflower seed, while green peas in season are an extra *bonne bouche*. Many of the Finches appreciate mealworms as much as the insectivorous birds.

THE ILLUSTRATIONS.

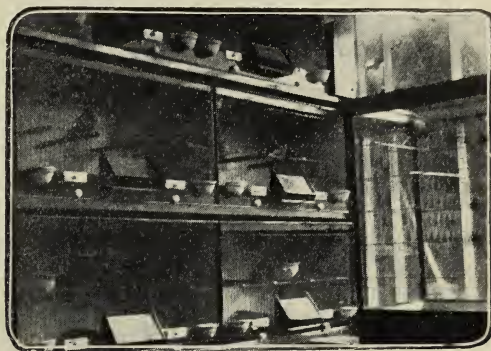
And now to our pictures. Figs. 1 and 2 give the full extent of the left and right-hand exterior views of the Crows' Aviary, kennels, bird-house, and Finches' aviary, with the fowls' enclosure in the foreground; Fig. 3 gives a larger picture of the Finches' aviary, together with an excellent portrait of its owner; from



Range of Cages in Mr. Maxwell's Bird-room,

Figs. 4 and 5 we gain some idea of the ship-shape order in which the interior of the bird-house is kept. Take note that CAGE BIRDS occupies an important position therein. With regard to the honours won, Mr. Maxwell holds that much-coveted trophy, the Dewar (£15 15s.) Challenge Shield, won

outright by him in the years 1902-3-4, and, of course, now his own property. The medallions round the rim are engraved with the former winners:—1898-9, Mr. Fulljames; 1900, Mr. E. M. Hardy; 1901, Mr. D. M. Thomas. He has besides some 45 medals, 10 being gold (of which 6 are from the N.B.B. & M.C.



Interior of Mr. Maxwell's Bird-room.

and 4 from the L. & P.O.S.), 30 silver and 5 bronze. Over and above the medals are 4 silver cups and 2 silver challenge bowls, all of which have had to be won more than once, some for "best birds" and others for "points."

In addition to these Mr. Maxwell has won for the first and only time they have been in competition the two handsome £5 5s. silver challenge cups of the N.B.B. & M.C., one for most points in hardbills, and the other for ditto in softbills. I asked Mr. Maxwell how many prizes he had won, but it was a question he could not answer, as he has not kept a diary, but many hundreds have, to my knowledge, been gained through his skill and enterprise at the Crystal Palace, Alexandra Palace, Royal Aquarium, Balham, South Metropolitan, and many other London suburban shows, in the largest and keenest competition in the world.

When I say that Mr. Maxwell has at one time made 60 entries at one show, it will be seen that he has been an unusually large exhibitor, and as proof of his success I may say that his special prizes won (not, of course, including the money prizes), run well into the value of three figures, his cheque from one show alone having amounted to as much as £17.

THE FANCIER'S REWARD.

Though I have mentioned the monetary point of view, it must not be thought for one moment that it influences our friend in the slightest degree. Much as he has spent, both in time and money, on his hobby, the only recompense he desires is the pleasure he gets from tending to his birds. As an exhibitor, he naturally likes to excel, but in common with all good sportsmen, he knows when he is beaten, and sets to work to go one better than his opponent at the next opportunity.

A History of Birds.

By W. P. PYCRAFT, A.L.S., F.Z.S., Etc.

CHAPTER I.

INTRODUCTORY.—WHAT IS A BIRD?

While some will have it that "the proper study of mankind is man," there are not a few of us who consider that really the proper study of mankind is—Ornithology. Birds, since the dawn of man's civilisation, have been the favourite objects of study with all those who possess that love of nature, and of wild creatures in particular, which is inborn. While the earlier naturalists of necessity began with a study of the habits of wild birds from the point of view of providing for the pot, there can be no doubt but that they soon learned that many species at any rate, were capable of domestication. And the keeping of domesticated animals was, according to a great authority on the origin of human institutions, one of the most important factors in bringing about the transformation from a state of wandering savages to the highly complex society of the civilised peoples of to-day.

In their endeavours to bring the wild creatures of nature into subjection, these early pioneers must have discovered, very soon, that birds would more than repay attention, and probably the earliest of their captives were kept as pets. Thus, then, we have good grounds for claiming for the science of Aviculture a hoary antiquity such as few sciences can boast. Birds, too, have played no small part in the shaping of the religious beliefs of more than one race, for from time immemorial the mysterious migrations and strange habits of these creatures have been regarded as portents of unusual significance.

BELIEFS AND SUPERSTITIONS.

The attention, however, which they drew upon themselves, from the religious point of view, was not always to their benefit, since many species came to be looked upon as birds of ill-omen, and to this day many have not outlived the infamy with which they were branded by the ignorant and superstitious of those dark days. Among the ancient Greeks, and the still more ancient Egyptians, birds were held in no light esteem, as may be seen in the literature of the one, and the hieroglyphics on the Pyramids of the other, while among later peoples, from Jewish historical times onwards, we find that, in one way or another, birds are constantly referred to. But the scientific study of birds, nevertheless, cannot be said to have begun until centuries after these old observers had passed away.

PATRON SAINTS OF ORNITHOLOGY.

The foundations of this study, one cannot but feel proud to think, were laid by two Englishmen, Francis Willughby (born 1635, died 1672)

and John Ray (born 1628, died 1705). To the labours of these two men—and especially of the first—we owe the first serious and useful attempt to classify birds, and their success was due to the fact that their knowledge was based on a practical experience, combined with an ability to weigh and analyse the facts they set themselves to arrange. To-day we have adopted quite other ideas as to the relationships of birds and their classification, yet every true ornithologist will regard Willughby and Ray as the patron saints of ornithology.

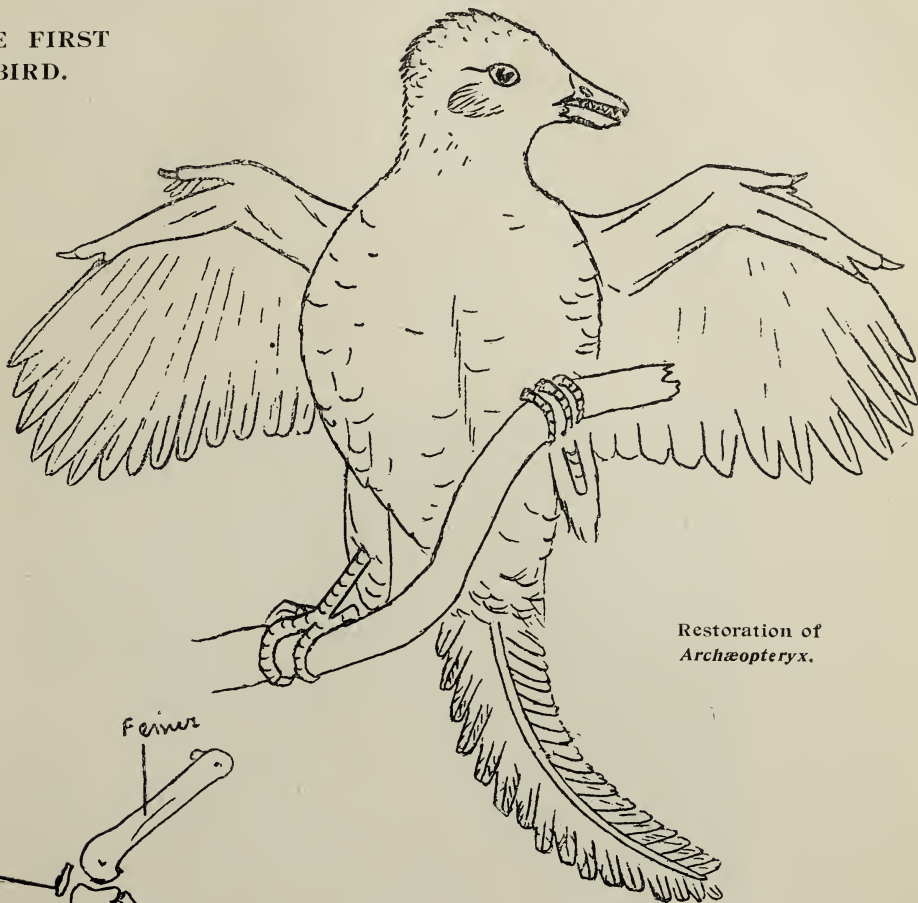
To sketch the further progress of our beloved science, or to trace even in outline the achievements of the many illustrious workers who have so unsparingly laboured in this field during the last two centuries, would be a task too long and too difficult. Our purpose, in these chapters, is rather to give a brief summary of the state of our knowledge of birds generally to-day. At no time would this be an easy task, but the present writer realises that the difficulties are lessened by the fact that he is addressing a sympathetic body of readers, men who, from long experience in the difficult work of bird-keeping, earned at the cost of many mistakes, will look with a kindly eye on these efforts to present the history of birds in such a way as to make it at once interesting, brief and accurate.

CHARACTERISTICS.

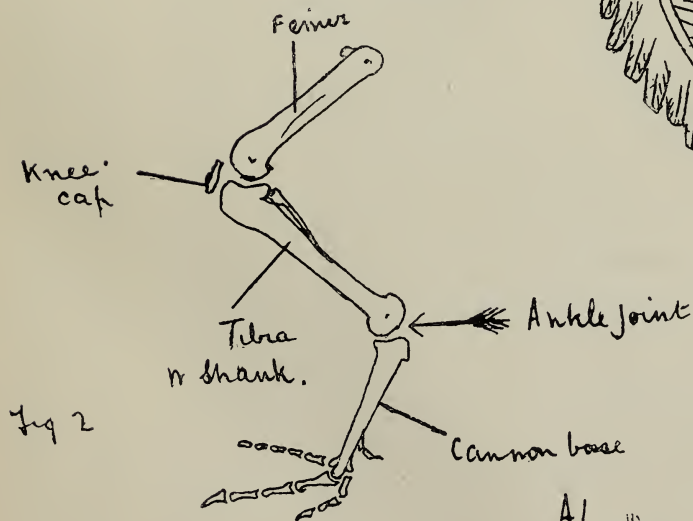
Without more ado then, let us begin with the question: What is a bird? Briefly, a bird may be distinguished from all other living creatures by its covering of feathers. But it is not by this token alone that birds are to be distinguished, since they differ almost as markedly in the matter of their skeleton. But it is not enough that we should be able to quote the "hall-mark," so to speak, by which our favourites are to be recognised. At least, it is not enough for those of us who are not content with mere facts, for facts in themselves are about as nourishing as rusty nails. Thus, then, we ask instinctively, how have the birds come by these distinguishing characters? The answer to this riddle has been furnished partly by the anatomist and partly by those who have spent their lives in reading the riddles of the rocks.

Let us take the anatomist's evidence first. According to him, the peculiarities which distinguish the bird have been derived from the reptiles. The skeleton, for example, is built in the same general lines as that of the reptile, and this is nowhere more evident than in the skull. As in the reptile, it joins the neck by a single, rounded boss of bone, while in the mammals (the great class to which we ourselves belong, the class distinguished by the body covering of hair and the fact that the young are suckled by milk) the skull joins the

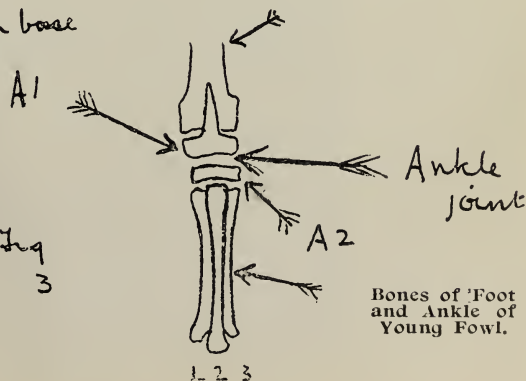
THE FIRST
BIRD.



Restoration of
Archæopteryx.



Hind Limb of Fowl.



A HISTORY OF BIRDS

By W. P. PYCRAFT, A.L.S., F.Z.S., Etc.

neck by two such bosses. In the form of the backbone, and of the hip girdle, and in the structure of the legs, birds also agree with the reptiles. To state the evidence on which these conclusions are founded in full, would be wearisome to those who are not particularly interested in dry bones, but we may indicate the nature of the argument by a comparison of the hind-limb of the bird and reptile.

COMPARISONS WITH REPTILES.

This limb then, in both, is peculiar in that the ankle-joint is formed in such a way that when the foot is bent the joint turns on a hinge formed between two rows of ankle bones, while in the mammals the joint is formed by the hinging of the shank of the leg upon the uppermost row of ankle bones. But the bird's leg, we may remark, is peculiar in that these two rows of ankle bones have undergone great modifications and can be seen in their originally separate condition only by examining the chick some time before hatching, though traces yet remain in, say, a young fowl of three months old. (See Fig. 3.) It is owing to the fact that these peculiarities are not generally known that most books on birds are inaccurate when they describe the "legs and toes" of a bird, the "legs" being the long "cannon-bones," which are clad in scales and often brightly coloured.

A reference to the accompanying diagram should make this clear. Here we have the leg of a fowl. The first joint is formed by the hinging of the femur, or thigh bone, marked F, with the tibia marked T, thus forming the "knee" joint. At the end of this tibia the joint with the ankle-bones takes place. But in the birds, as we have said, the two rows which these small bones make up disappear before adult life is reached. One row (marked A₁, Fig. 3) composed, in the half-grown bird, of a mallet-like piece, the handle of which runs up the front of the tibia or shank, becomes welded to the "shank," while the other (marked A₂, Fig. 3), composed of several small pieces originally, but now forming a thin plate, becomes welded on to the top of the bones of the foot. It is these last which are always, but wrongly, described as the "leg" bones. Really, they answer to the bones of our own feet which lie between the ankle and the toes. Finally, we have the toes, about which there can be no mistake.

The great lengthening of the foot-bones has been brought about by the evolution of the bird from a crawling to a walking animal. Originally they were five in number, but are now, like the toes, reduced to four. Of these four, three are now welded together to form a single "cannon" bone, answering to that of the horse, but in the young bird their originally separate condition can still be traced (see Fig. 3). The fourth of these foot-bones is now reduced to a mere "button" of bone slung by ligaments on to the "cannon" bone. The leg of the old giant reptiles known as the Dinosaurs corresponds marvellously well with that of a modern

bird, only in the reptiles the foot-bones had not become welded to form a cannon bone. So much, then, for the evidence from the skeleton, for the present. The arrangement of the blood-vessels, the structure of the eye, ear, organs of smell, and brain, are all on the reptile plan, and so, also, are the organs of reproduction. Similarly the microscopic structure of the growing feather in the embryo, or unhatched chick, shows that it is really an extremely elaborate reptile scale, and is formed on a plan quite different from the hairs of mammals.

EVIDENCE OF THE ROCKS

But, it may be urged, it is all very well and it may be quite true to say that because the reptiles and the birds have so much in common, therefore they must be related. But why should we assume this? Well, one of two courses are open to us. Either we must believe that birds were, as used to be held, specially created, or that they have inherited these common characters from a common ancestor, which must have been some sort of a reptile. And in support of the reasonableness of this latter view we may appeal to the evidence which the rocks have preserved for us in the shape of the fossil remains of ancestral birds. In these we have still further and more striking proof of the descent of birds from reptiles.

The earliest fossil bird yet discovered is that known as the *Archæopteryx*, and this differed from all other birds in one or two very important particulars. In each case they serve to bridge the gap between the reptiles and the birds, though it must be admitted many other links are desirable to make the chain absolutely complete. In the first place, instead of the horny sheaths which cover the beak of living birds, we find the jaws were provided with teeth, set in sockets like those of the crocodile, while in the second, the tail was of great length, being made up of a long row of bones, as in the tail of reptiles. Each bone supported a pair of feathers, as may be seen in our illustration, so that in this respect it was neither like that of the reptile nor of the typical bird. In the latter, the tail is apparently fashioned after a very different manner, but in examining this it must be remembered that what is commonly called the "tail" is really only the outward and visible sign of this appendage, for the feathers alone no more make the tail than do the hairs the tail of a dog.

When we come, then, to examine the arrangement of the tail-feathers, we find that they are set fan-wise about a plate of bone, the last of a series of the eight separate tail bones which form the termination of the backbone. And if we examine this bony plate in the embryo of, say, a duck, we shall find that it is really made up of six or seven separate vertebræ, which have become, as it were, telescoped. Now each of these represents one of the feather-bearing vertebræ in the tail of the *Archæopteryx*, but by this process of "telescoping," this shrinking in

length, they have brought the bones of the feathers they supported close together in the fan-wise fashion we have just described. Here, then, we have a lesson in the evolution of birds; a transformation which will go far to help towards realising how similar changes could bring about the evolution of the reptile into the bird. Some day, without doubt, some yet older form of bird will be discovered, and this will show yet more reptilian characters.

HOW SPECIES ARE EVOLVED.

The theory that birds have descended from reptiles is no baseless assumption, but a well-founded deduction, a conclusion that will pre-

sent no difficulties to those who are familiar with bird-breeding. For just as it is possible to say, in hybrids, for example, that such and such a character must be the outcome of such and such a cross, must have been inherited from this or that particular species or race, so we conclude that more deeply-seated characters have been derived in a similar way, from ancestors in which this particular character was specially well developed. The expert in mule-breeding, for example, has no difficulty, no hesitation, in assigning the peculiarities of the mule to one or other of the parent forms. He would scoff at the suggestion of special creation, and the same arguments apply to the wider issues now under discussion.

"COCKIE,"

whose portrait appears on this page, is a bold, handsome bird, with beautifully clean white body feathers, his head surmounted by a sulphur-coloured crest. The underneath part of his wings and tail are also sulphur coloured. He is a striking object as he comes sailing through the air, with a spread of wings of about 3 feet, and is so tame that he will alight on one shoulder and perch there quite contentedly. Unfortunately he cannot talk (only a discordant screech), but can whistle beautifully.

Up to a short time ago, he

obeyed his own sweet will with regard to flying loose, but his depredations on the garden peas (of which he is very fond) caused the curtailment of his liberty, and now he is only allowed loose occasionally.

The way he posed to have his photograph taken was splendid, and would have done credit to a human being.

The photograph is original, and was taken specially for "Cage Birds" photographic competition in which it secured first prize and special. — Donald Kendall, Jr., Fir Tree House, Higher Bebington, Ches.



Sulphur-crested Cockatoo.

Canary Breeding for Beginners.

By ARTHUR PRICE.

I shall commence my remarks on this subject with the mating and everything necessary towards making the season a good one in breeding. Although only an amateur in the exhibition world, I at my first attempt won first prize at the Crystal Palace of 1903 with a bird of my own breeding; and I bred in my first year 41 youngsters from four hens, and the young ones did well and thrived, and most of them won for me on the Show Bench.

First Make Your Cages.

I make all my own cages during spare hours, and when a man takes an interest in the hobby it is surprising how he forgets the time flying, especially when he is cage-making. The boxes I use for the purpose are Colman's 28lb. starch boxes, and I think there is plenty of room in them, for I have used them with success. I buy the fronts ready made by the dozen, which is cheaper than buying them singly, and they run about 7s. a dozen the size you want, viz., 17¼ by 10¼ inches; and while these are on order you can whitewash the boxes and put in the cross-piece necessary to prevent the sand and seed from scattering on the floor, this cross-piece being about 2½ inches broad. I use wood which joiners call beading for making my perches, first planing off the edges. You can make the cross-pieces above mentioned from the lids off the boxes, and you will find that the wood works up evenly and smooth.

Setting up Housekeeping.

After having got all the requisites, such as nest-pans, drinkers, seed-boxes, etc., you can then watch your birds to see whether the ones you intend breeding with are ready to commence the housekeeping business. This you will be able to see quite plainly, for if the cocks are in full song and the hens fly vigorously from perch to perch you can safely put them together, of course considering the weather.

If you are a beginner in the fancy you must first secure some good birds to breed with. What I mean by good birds are those which you know contain some good blood, for without this qualification you may as well not try to breed birds for the show bench, or even birds that excel in size and shape; and remember it costs you no more to breed and rear good birds than it does common ones. I should advise a beginner to go to a fancier who is a known exhibitor, and if he will look through the advertising columns of "Cage Birds" he will find plenty of well-known men who can be relied upon. Having selected your man, you write and ask him price of, say, buff cock and two yellow hens, or yellow cock and two buff hens, of good type and matched for breeding. Do not mind giving a good price for them, as it will pay you in the

long run, and you can have the birds on approval by depositing your cash with the editor, which is by far the safest plan.

Nesting Arrangements.

Now if you think your birds are quite ready to breed with, run the buff cock in with the yellow hen, and after two days put in your nest and a little nesting material. I use moss of my own gathering and a little cotton-wool—no cow-hair, as I think this breeds too much red mite. I find the earthenware or tin nest-pans are the best. You will soon see your birds making up their happy home, and you then keep a look-out for the first egg, and when this is laid, transfer it from the nest into a box, and substitute a marble for the egg. I use a "Bovril" box for my egg-box, and I find this answers the purpose well, as it contains the necessary compartments, which you can number like your cages to prevent the eggs getting mixed.

When the hen has laid her third egg, place the other eggs back in the nest and take away the marbles; then take away the cock bird. The hen will still go on sitting, and you will be able to use the cock with the other hen, for I use one cock to two hens with success. If a very good hen that you have will not sit, you must transfer the eggs from her to one or two hens that are going on sitting, that is, if you have any sitting and due to hatch about the same time. Lots of hens will not sit with the cage-front open, therefore in such cases try a screen over the front from top to the door, but it is best not to use the screen if the hens will do without.

Avoid Early Marriages.

I should have mentioned before this that I pair my birds up the last week in March or the first week in April, but of course if the weather is bad—for you will be surprised what bad effect the cold winds will have on the birds—I keep them back a week, for it is wise to study a little before losing, say, one or two nests of eggs, as this disheartens a beginner. There must be a sharp look-out for cases of egg binding, as I think this is one of the worst things you have to contend with. If you see a hen sit in a lump, panting hard and in pain, you must take prompt steps to see to the cause. I find castor oil dropped on the vent, or a warm sponge just held on the body, will help the hen to part with the egg.

The most important point during the breeding season is to let the birds have plenty of fresh clean water, good seed and egg-food, and last, but not least, perfect quietness, keeping all strangers out of the room, for I have found the quieter the birds are, the better are the results of their labours.

Nursery Diet.

The hens sit thirteen days, and two days before they are due to hatch you must provide them with egg-food. A little will do, and you can increase the amount when the youngsters are born, but let it be fresh and sweet. Give plenty of green food, such as watercress and dandelion, fresh twice a day, or oftener if you wish, but don't neglect to give it first thing in the morning, and, say, five to six in the evening. I make my egg-food as follows: Take one thick slice of home-made bread to each egg, put through the egg-mill, and mix well together. I find bread beats biscuits hollow.

When the youngsters begin to leave the nest, supply them with crushed hempseed besides the egg-food, and when you see they can digest it alone you will be safe in taking them away from the hen. If you do not do this you will find the hen, wanting to go to nest again, will pull out the youngsters' tails for nesting material; and, having got your first nest away with success, you will know how to prepare for the second. You must, of course, go on giving the first lot of youngsters egg-food and crushed hemp, reducing the egg-food every other day.

The Training of a Candidate for Honours.

After your second nest is nicely over, your time will be taken up with picking out the birds you think will do for the show bench at first-feather shows. Let the birds have the bath frequently, as it strengthens them, I think, and get them accustomed to the show cage by letting it hang on the front of the cage with the doors up, so that they can run into the show cage. Twice a week I take about six birds down into the kitchen in their show cages, and place them on the table, and with the constant passing of those in the house the birds get a lot quieter and not so wild. And there is nothing more provoking to yourself or the judge to find that, on lifting up the show cage to examine the bird, it flutters all over the wires, thereby disarranging its feathers and knocking itself about so that it cannot stand erect.

Moulting and Colour-feeding.

After the first-feather shows are about over, you will see your birds begin to shed their feathers, and you will know the moulting-season is not far off. This is the time which lots of fanciers look upon with dread, but let the birds again have perfect quietness, fresh water, with

one or two drops of essence of aniseed therein, and you need not be afraid. If you colour-feed you must keep a lot of the light out, so that your birds' colour does not fade, and you must colour-feed if you wish to be in the vanguard of the exhibition world, for I consider a non-fed bird is just like a wall that has been papered and not varnished.

At colour-feeding time your egg-food comes into use again, and with this you mix your colour-food. I have used "Sandiford's," and I find it very good indeed. Use it gently at first, as all birds will not eat it to begin with, but by doing this you will get them used to it, and then you can strengthen it day by day. If during this time you see one or two of the birds down, that is, sitting lumpy and half-asleep, give them a little ordinary bread soaked in warm milk, with a little treacle on it, and this should pull them round.

Conditioning Show Birds.

Separate the birds you intend exhibiting, and let them each have a cage of their own, which must be very clean. I give each some conditioning food made as follows: Place one penny-worth of isinglass in a cup, half fill with water, and put into the oven until hot; then take it out, let it cool until it becomes a jelly, and mix it with egg-food, and give to each bird a teaspoonful twice a week. This will have a good effect on the birds.

Let the birds have the show cage again and be in the kitchen. You will find them timid at first, but use is second nature, so give them plenty of use. After the show season I feed on plain white seed, with a touch of hemp, say, once a week.

Is Heat Needful?

After the winter is past—during which I use no heat at all—you will be getting near the breeding season again, and of course, if you have been successful during last season you will naturally go on the same lines again; but you must also use your brains, and try and remedy any defects you may find out.

I advise all beginners to join an Ornithological Society, where they will learn a lot to their advantage.

I trust my remarks will benefit all fanciers who have not been as successful as myself, and may they breed and rear as many birds which will all turn out winners.



The Kingfisher.

By F. FINN, B.A., F.Z.S., M.B.O.U.

(See *Frontispiece*.)

The remark is often made that our Kingfisher is a tropical-looking bird, and the observation is a singularly just one, for, as a matter of fact, the Kingfisher is tropical; it is a member of a thoroughly tropical family, and our species (*Alcedo ispida*) is itself more common in hot than in temperate climates, though it ranges all across the Old World. Its existence in our country is therefore a living refutation of those ornithologists who want to kill off Rollers, Bee-eaters, etc., when they visit us, on the plea that birds of this type, characteristic of warm regions, could not possibly establish themselves here. I am not denying that our severe winter is a serious check on the Kingfisher, which does not usually migrate from us; and it is sad to think that many are starved to death at that season, when Jack Frost locks up the waters containing the food supply.

The Kingfisher at Sea.

Those individuals which can succeed in reaching the coast have the best chance of surviving, since they can find open water and can accommodate themselves to a diet of sea-fish; the difference in the water itself does not trouble them, for it is doubtful if this bird ever drinks. The Greeks seem to have known it only as a seashore bird, for this was the famed "halcyon" of antiquity, supposed to brood its eggs in a floating nest during the celebrated "halcyon days," when Neptune kept the sea calm for his pets. It seems probable that the classical observers only saw it on its autumn migrations, when it certainly is a shore-bird; I have seen it in Port Said harbour myself. Hence its breeding was always a mystery to them.

A Mythical Nest.

There has been a good deal of modern myth and mystery about the Kingfisher's nest, which was supposed to be made of fish-bones, and therefore very difficult to take out whole; and I fancy that the legend that the British Museum authorities would give £100 for a perfect nest still lingers here and there. The fact is that the Kingfisher does not build any nest at all; it occupies a disused rat-hole, or burrows out a home itself, using its long bill as a pick and its quaint little feet as shovels. Then, when the hole is in occupation, the family all spit their fish-bones on the floor, for the Kingfisher, like the Owl and so many other birds, casts "quids" or pellets of the indigestible parts of its food. These after-dinner remnants are trodden by the birds into a sort of mat, and this is what has passed as the "nest."

A Curious Family.

The hen Kingfisher lays about half-a-dozen eggs, which would be pure white but for an exquisite blush imparted by the yolk within.

The young which emerge from them are most curious little beings, never having any down, and looking, when the pen-feathers appear, like miniature metal hedgehogs, the feather-sheaths having a silvery appearance. Their gait is also remarkable, for they run backwards as readily as forwards, if not more so. This is a useful instinct, enabling the young, after coming forward, to retreat down their tunnel in case of need without being obliged to turn round, and thus get in each others' way or stick fast. They consume an immense amount of food, and it is a wonder how the parents ever get enough to satisfy them, considering their method of fishing.

The Only Way.

For the Kingfisher, being neither a wading nor a swimming bird, has but one way of securing his food—to wait for its appearance and pounce on it. He "makes his point" either from a perch, or when hovering like a miniature Kestrel, but he often misses. I used to calculate, from watching one that haunted the pond in the Calcutta Museum grounds, that he only scored about once in three tries; but, after all the wonder is he succeeds so often, considering the nimbleness of a fish. Fish, however, are not his only prey, for he also takes crustaceans and water insects, to say nothing of tadpoles and probably little frogs, for he will feed on these last in captivity. The abundance of freshwater shrimps in the East is no doubt one very great reason why this bird is so common there.

The Immature Plumage.

It is well known that young Kingfishers when they leave the nests have not such long beaks as they will ultimately possess, but the full degree of difference between the young and adult birds is seldom correctly stated. Not only are the fledged young slightly less brilliant above than their parents, but they are decidedly different below, being dull cinnamon instead of rich chestnut, with a wash of dirty dark green on the breast; and their feet are nearly black instead of the brilliant scarlet of those of the old birds. Their beaks also lack the scarlet streak along the lower jaw which is found in adults.

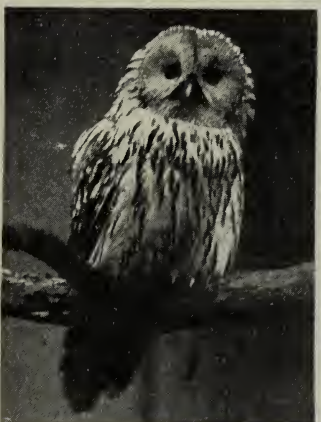
The Kingfisher in Aviculture.

Young Kingfishers are not at all difficult to rear if one can get enough small fish—at least, that has been my experience. If minnows, etc., cannot be obtained, the flesh of large fish cut up should be substituted, or, in case of need, minced and washed raw meat. With these dried flies should be mixed, and some mealworms added, to give the birds some natural material for producing their castings. It is always well to keep the birds accustomed to mealworms and meat, in view of the fact that they are not purely fish-eaters.

SOME INTERESTING OWLS.

Photographed by W. S. BERRIDGE.

[All Rights Reserved.]



Eagle Owl.
Ural Owl.
Barn Owl.

Milky Eagle Owl.
Pel's Owl.
Arctic Snowy Owl.

The Yellow Plantain Eater or Hangnest.

(*Icterus xanthornis*).

By W. T. PAGE, F.Z.S.

Among the rare birds recently presented to the Zoo by an esteemed friend and fellow-aviculturist was one of these fine and handsome birds, and it may now be seen disporting itself in the Western Aviary at our London Gardens.

PLUMAGE.

This is exceedingly beautiful, the colours being very intense and effulgent. Upper parts, brilliant yellow, washed with olivaceous on the interscapulum; lores, wings, and middle of throat, velvety black; lesser wing-coverts, yellow, slightly washed with green in some specimens; the greater wing-coverts, secondaries and primaries are finely edged with white, these markings being somewhat variable (comparing three skins which reached me from Georgetown, British Guiana, last summer, all are distinctly marked with white, but in one specimen especially these markings are very distinct and also broad compared with the type); under parts, bright yellow; tail, black; bill, legs, and feet, black. Total length, 7.5in., of which the tail measures 3.5in.

The female is similar as to plumage, but if my skins are correctly sexed she is slightly the larger bird, and her bill is a trifle shorter than that of her mate.

The above descriptions are from skins sent to me direct from British Guiana. With them I also received two nests and a pair of eggs, a nest being herewith illustrated.

These birds nest in colonies, and suspend their elongated purse-shaped nests from the branches, but description is not needed with the accompanying reproduction of the photo of one of the nests now in my cabinet. The sizes are respectively 14 inches long and 4 inches diameter (see photo), and 12 inches by 4 inches.

The eggs are very pale bluish-green, lined and spotted with black; size, $1\frac{1}{16}$ in. by $\frac{7}{16}$ in.

HABITAT.

This is given by the British Museum Catalogue of Birds as Northern Columbia, Venezuela, Trinidad, Guiana, Cayenne, and Upper Rio Negro. The skins, nests, and eggs described herein were taken in Georgetown, British Guiana.

In the aviary these, and in fact all the Hang-nests, are most desirable and beautiful inmates, but they should not be associated with birds weaker or

smaller than themselves; also, either as single birds or in pairs, they are cage-birds *par excellence*. Though I believe the afore-mentioned specimen at the Zoo to be the first living specimen imported to this country, there is no reason why they should not be freely imported if they were inquired for, as they can be taken quite close to port. They would require dieting on ripe fruit, living insects, and some good soft food mixture, and the only protection they would require would be to be kept free from draught. The photos do not properly convey a correct idea of the contrast between the beautiful yellows and black of the plumage. They are active, fearless birds, of fine form and erect carriage, and would be a source of continuous pleasure and interest to their owner, whether kept in a cage or flying at large in the aviary.

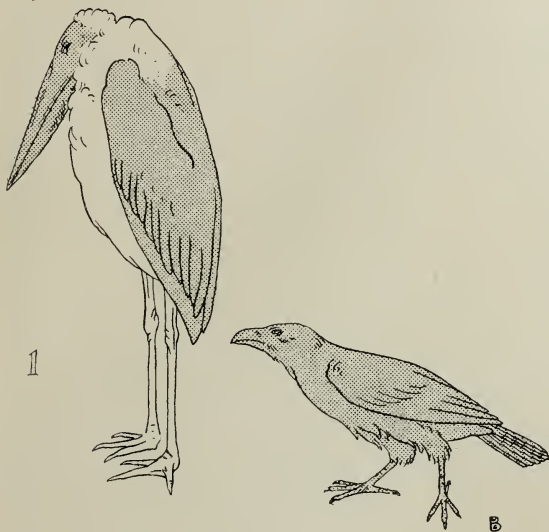
All the Hang-nests are handsome and interesting birds, and my remarks as to *I. xanthornis* would, as regards food, treat-

ment, and demeanour, apply pretty well to all the species. All this genus are desirable inmates of either cage or aviary, and all (even the Black Hangnest) are exceedingly handsome and interesting birds.

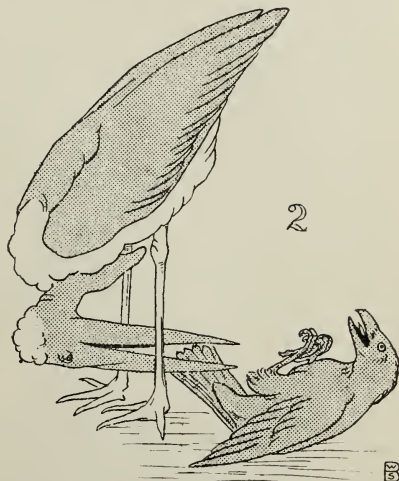
The term Plantain-eater, though correct enough in regard to the partly-frugivorous habits of the birds, is not a very happy one, being also applied to some Touracous (*Musopha-gidæ*).



Let Sleeping Dogs Lie; or,
"Quoth the Raven."



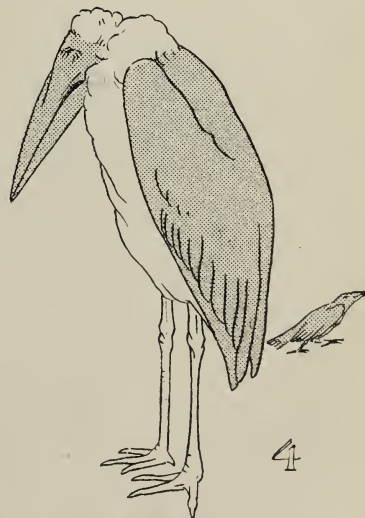
1. "By Jove!" said the Raven, "that Marabou's asleep. Here's a chance for me."



2. "Not just this time," said the Marabou, while he grinned between his legs at the flabbergasted bird of ill-omen.



3. "I was always fond of 'high-kicking.' Try one of my Left Footers."



4. But the Raven went off to tell one of his friends about his glorious battle with the old Marabou.

The Firefinches.

By MRS. HAUTENVILLE COPE.

Asking questions does not always mean an absence of information; sometimes it means only that one wants to add to one's knowledge by ascertaining how much other folks know on a subject.

The particular questions I wanted answered were as to the species of firefinch (*Lagonosticta*) I had brought from a bird dealer. He assured me they were "just ordinary firefinches," but the regular triangular patch of small white spots extending from under each wing was different from a firefinch I possessed some years ago. "Them with the whitest spots is the hens," he said. There again I felt uncertainty, so I bought several to see what happened.

Misfortunes and Remedies.

The story is a sad one, for out of the number both genuine hens died, as did also one of the birds in colour. This one was never of such a rich cherry-colour as the rest, and had no side-spots. I should have pronounced it a badly-coloured cock firefinch had not I twice seen a genuine cock in my possession pair with it. They built but did not lay.

To add to my uncertainty, I visited the Zoological Gardens and was surprised to find birds similar to mine labelled *Lagonosticta rufopicta*, while as *Lagonosticta senegala* they have a larger, duller firefinch, more like *Lagonosticta congica*. Somehow at the Zoological Gardens the labels seem to have got mixed, for *Lagonosticta brunneiceps* there resembles *senegala* at Kensington.

These lovely little finches can only be thoroughly appreciated in real life; the dried skins give little if any idea of the birds' shape, but if the Zoological Society manage to keep alive the lovely waxbills they possess it will be extraordinary, as they are being fed on canary seed, Algerian millet, and rape, with spray millet and fresh grass.

Now in their native land these little birds are almost entirely insectivorous, or live on minute fresh seeds. Besides, they require sleeping-boxes and a covering at night. It is impossible for them to exist for long on dry hard seed.

The test with all birds as to whether they are flourishing on the diet and under the conditions in which they are kept is that the plumage should have on it that indescribable bloom seldom seen in cage birds.

Foreign finches, especially the rarer kinds, soon lose this gloss; they become dishevelled and bald, till finally death delivers them from captivity. Years ago I carefully studied alopecia, or baldness, in these little finches, till I discovered the remedy.

Museum Researches.

When I asked questions about firefinches in bird newspapers, I was referred to the "bird-skins" in South Kensington Museum, so thither I went at once to investigate as to what a firefinch was, or rather, how many different sorts of firefinch are known to exist.

The stuffed birds on the museum shelves in the Bird Gallery gave me no information; one dingy, decrepid little specimen was all I could discover. But for scientific purposes the skins of foreign birds are stored in drawers in the Bird-room, and these were shown to me most courteously by Mr. Chubb.

The firefinches are "*Lagonosticta*" under the present nomenclature, but under older ornithologists they ranked as "*Estrela*," I believe.

Firefinches, however, may be sub-divided into three varieties. Under the first I will put the smaller specimens, with soft, pink, shell-like beaks and distinct yellow rims to the eyes.

The smallest, of which South Kensington possesses only two skins, is labelled *Lagonosticta senegala*. Both apparently are cocks.

The colour is a vivid scarlet red, and no white side spots are to be seen, though Dr. Butler says the hens have spots. It is very decidedly smaller than any of the rest, about 3 to 3½ inches long only; the legs and feet light.

Though apparently called the Common African Senegal Firefinch, it is most uncommon. I have never seen any for sale.

The Familiar Firefinch.

Next in size is "the Firefinch" of the English bird dealers, *Lagonosticta brunneiceps*, or the Brown-headed Firefinch, from the patch of brown at the back of the head, which never changes, although the rest of the bird turns a glowing ruby red when in colour.

This bird is also known as *Lagonosticta minima* or *minuta*.

Under each wing there are white spots in triangular patches.

They are bright little birds, an ornament to any aviary, with a very sweet, canary-like chirp and a low short song.

This species has been reared in England, but not in cages.

Their food is small seeds, in addition to millet and insects. Sleeping nests are a necessity to these little birds.

The firefinch has the reputation of great delicacy, which is a mistaken one; but they are large eaters for their size. They require exercise, which in a cage they seldom get.

Some birds do not go out of colour; probably after a certain age the colour is permanent. The change of colour comes with a complete moult, the red feathers coming under the brown



Mr. Garthwaite, of Grimsby, and his birds—an ingenious method of hand feeding.

ones, the brown feathers growing long and finally dropping out.

The moult comes in autumn, as in these birds' native countries the hottest weather is during our English winter-time. They are found all over Africa, but imported from Senegal, and hence called Senegal firefinches.

Other Species.

Next in size to *Lagonosticta brunneiceps*, but rarely imported into England, is the Vinaceous Firefinch, *Lagonosticta vinacea*, more of a finch than a waxbill.

The head is black and velvety, the body a curious dull, pinkish mauve, a most distinct colour, not likely to be confused with any other firefinch's. The legs and feet are dark.

The larger firefinches are most difficult to distinguish, but are all larger than the three I have described. They seem to form a section to themselves.

Lagonosticta larvata, the Masked Firefinch, with black legs and feet.

Lagonosticta polionota, whose back and wings are dark grey-brown.

Lagonosticta congica is a faint-coloured bird, resembling *Lagonosticta larvata*.

Lagonosticta rhodoparia resembles *Lagonosticta polionota*.

Lagonosticta rufopicta, the Ruddy Firefinch,

has a red breast with flat white spots, the back and other parts dark grey-brown. It is known also as the Bar-breasted Firefinch, as the scarlet crosses the breast in a broad band.

Lagonosticta rubricata is larger than the last, dark grey-brown, with rose-coloured breast and very large white spots.

The female is brown, with rose under the chin. She reminds me of a young Robin.

Lagonosticta niveiguttata, or Peters' Spotted Finch, is the handsomest of all, a splendid bird, with a scarlet head and throat, and the white spots large and distinct.

It is as large as a weaver, and has no resemblance to *Lagonosticta brunneiceps*.

Lastly, we have the grey *Lagonostictas*, *Lagonosticta cerulescens*, known as the Lavender Finch, and the rarer Black-tailed Lavender Finch, *Lagonosticta incana*.

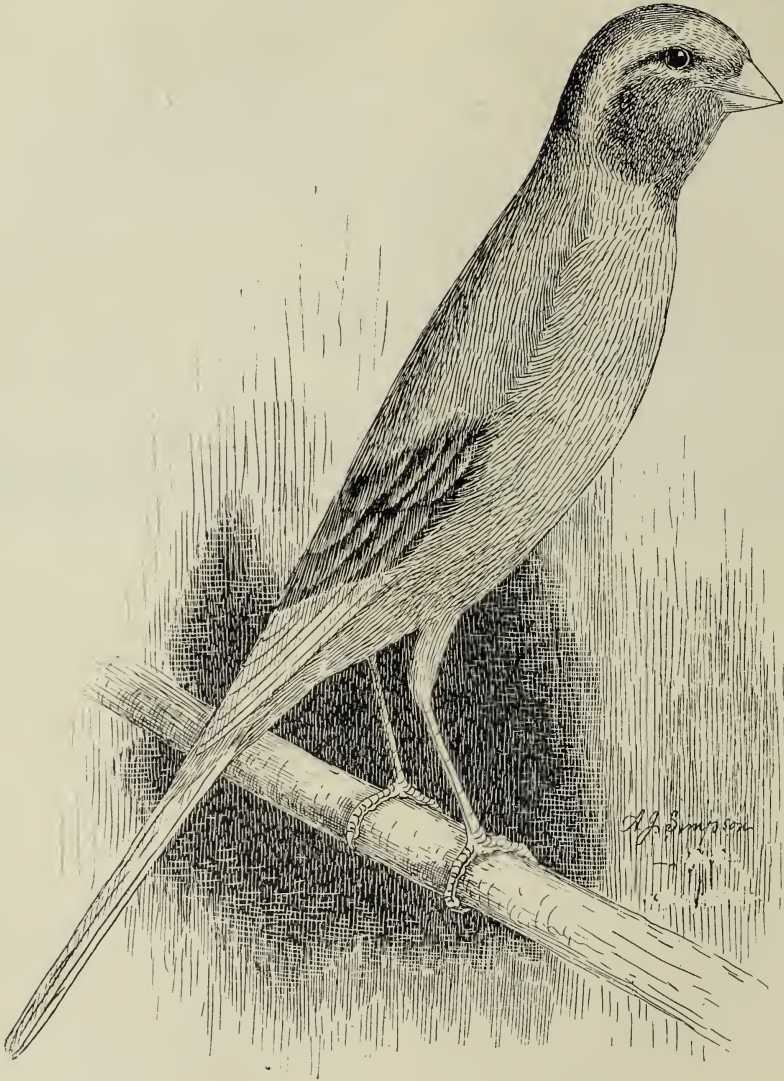
Fair Play for Foreign Finchlets.

If our common hardy English birds were exported across the seas, given indigestible food, and kept in small cages, they, too, would earn the reputation of being delicate and difficult to keep alive.

I am quite sure that once the firefinches recover the voyage and are properly fed and housed they will live and thrive and make charming pets, for they are sociable, fearless little birds, full of life and energy.

A Yorkshire Canary.

AS SEEN BY MR. A. J. SIMPSON.



What can we say new about the slim and graceful Yorkshire bird? No two artists seem to picture him from the same view-point, but he is always as elegant, as dignified, as stylish as a Piccadilly Dandy. He is now running nearly a neck-to-neck race for popularity with the chubby Norwich.



One of the Sights of Paris—the Birds' Friend at the Tuileries Gardens.

Little Bird Friends.

A HISTORY RELATED BY MISS H. B. RUTT FOR YOUNG BIRD LOVERS

(Continued from p. 28.)

CHAPTER II.

LAPIS LAZULI, THE INDIGO BIRD.

This bird has a dreadfully grand name, has it not? I will tell you how I came to give it to him. He is a most lovely blue all over. He is the third bird of this kind that I have had; the others were named Speedwell and Bluebell, both pretty names. But the colour of the feathers is so exactly the colour of the stone called lapis lazuli that I felt I must give the next Indigo bird I had this rather ugly name.

The real Lapis Lazuli.

The only time that I have seen this beautiful stone in the rough, just as it was blasted out of the rock, was a very long time ago—in 1874—during my first visit to Switzerland. The great St. Gothard railway tunnel was being made, and the workmen were blasting and tearing the mountain to pieces. Porphyry, a rich purple, and lapis lazuli cropped up here and there among the commoner kinds of stone. We began our journey over the mountains in a diligence, a kind of stage-coach. It was still early in the

year, and we ascended so high that it was intensely cold, and we were soon in the snow. The road was cut out as far as possible, shining walls of glistening white rising high on each side. But at last we could go no farther. We found sleighs, with runners instead of wheels, waiting for us. Each sleigh just held two passengers and the driver. It was splendid fun dashing over the smooth snow, the horses seeming to enjoy it as much as we did. But here and there a tiresome piece of rock stuck up, and we were sometimes bumped about a good bit. We saw one sleigh turned right over, and the passengers pitched out on the soft snow. But we had no such adventure. As we descended the other side of the pass we were soon able to leave the sleighs, and get into another diligence which was waiting for us. When at last we reached a little town with an inn we were, as you may suppose, very glad of some hot coffee. Here we saw for sale many little ornaments made of porphyry and lapis lazuli. The brother with whom I was travelling gave me a little blue cross as a memento of our exciting journey across the snow.

The Indigo Finch's Home.

My Lapis Lazuli comes from North America; that is his native country, and I think several of them flying about in the bright sunshine must indeed be a splendid sight. He, like many foreign birds, loses his gay colour when he moults in the autumn, only regaining it in the spring. During the winter he is a quite dark brown, with only just a touch of blue here and there.

He is a migratory bird; that is, one who fancies a change of air every year—like some rich people, who have a house in England where they enjoy the summer, and another in the South of France where they live in the winter, leaving cold winds and fogs behind. Our little blue friend does not take quite such a long journey as some of the swallows do. He lives in the northern parts of the United States and Canada in the summer, travelling southwards towards the Mississippi River at the approach of winter. But Lapis Lazuli does not seem to mind the English climate, as he is quite well all the year round in my room, where we get nearly all the sunshine, but where there is no fire even in quite cold weather.

Migration Fever.

It is a curious thing that, although the autumn passes by without his making any fuss about migrating southwards, in the spring for a time he feels very uncomfortable. Something seems to say to him, "Go north! go north!" Although he is quite happy, not too warm, and of course has plenty of food, this is Nature's call to him. Perhaps you do not know that most of our own British birds who are migratory travel chiefly at night. It is evidently the same with the Indigo birds, as Lapis Lazuli, instead of sleeping quietly all night, as people with easy consciences and good health should do, flies about the cage calling out at the highest pitch of his voice. This is naturally most annoying to the other inhabitants of the Château. Sometimes they are quite scared, and begin to fly about, too. But after a few nights they get accustomed to this strange behaviour, and only scold him in very sleepy voices.

Migrating Beasts.

This migratory instinct is so strong that it amounts almost to madness in some curious little animals that live in Norway, called lemmings. They are active and fierce, rather larger than a mole, and very fat. When attacked by a foe, instead of running away they stand on their hind legs, lean their backs against a large stone or the trunk of a tree, and fight to the death. At certain seasons, about every three or four years, the call comes to them with irresistible power, "Go west! go west!" They collect in immense flocks and prepare to obey. Only some go, of course, somewhat in the way that bees swarm when they begin to feel overcrowded or some of the young folk are eager

for adventures. In the case of the bees this idea is generally crowned with success. But not so, alas! with the lemmings. They obey the call, strictly and literally, as though each little lemming had a compass in his waistcoat pocket. On their journey westward, should a little hillock be in the way, they go over it, not round it. When they come to a river they swim across.

Wholesale Suicide.

Well, in Norway, if anyone travels persistently westwards, there is only one end possible, and that is that at last they reach the sea. And so do the lemmings, but, without hesitating a moment, they plunge into the waves and try to swim across. Of course, they cannot do this, and each year thousands of the little animals perish in this way. When I was in Norway I saw one or two lemmings quietly feeding in the grass, but it was not the right time of the year to see the migratory march. I was glad it was not, for I think it must be a terrible sight. Their unreasoning obedience always puts me in mind of the little poem, "Casabianca," that begins, "The boy stood on the burning deck."

More about "Lapis Lazuli."

During the summer Lapis Lazuli has a lovely song, very clear and sweet. Besides seeds, he is very fond of some insects, and his favourites are young grasshoppers. He will take them from my fingers, giving the head a good nip first so that the creature is dead at once, and then he eats them up at his leisure. Lapis Lazuli is a very nice, well-mannered bird, and quite one of my favourites.

Let us try to do a little "imagining," as small children call it, about the different countries where my birds were born. I have never myself been out of Europe. Perhaps many of you have never been out of England. All the birds that I have now have come from Asia, Africa, America, or Australia. Even other European countries are different from England. The people are different, the country parts are different, and the towns different. And in these other continents the difference must be much greater. But I think it is delightful to think about them. If we cannot go to the country itself it is best to read what we can about it, then hear it described by those who have been there, and then add our own "imaginings," which will just give the finishing touch and make it all seem much more real.

His Native Country.

Now Lapis Lazuli comes from North America, and this is of course in some ways much less foreign than any other foreign country, partly because the people speak English. Many of the words they use are strange to us, and also the pronunciation, but still, it is very nearly the same language that we speak ourselves, and this is a great bond of union. Then, more than that, the people, to a large extent, are our own flesh and blood; in a sense, cousins, as it

was originally colonised by emigrants from England.

But the parents of Lapis Lazuli, as you know, did not remain here all the year. When the irresistible call "Go north!" sounded in their ears, and they, with probably Lapis Lazuli himself and thousands of other birds, sped northwards, unconsciously they crossed the frontier. No custom-house officer stopped them to ask for their name or business, nor to examine their luggage and demand duties. No; while all slept—for even United States officials must need some rest—the crowd of free passengers, high up in the air above the sleeping cities of the great Republic, crossed the border line, and when dawn broke were under the protection of the British flag, and in part of that mighty Empire of which it is said that upon it the sun never sets.

On British Soil.

For they were now in Canada, and here enjoyed the glorious summer, again returning southwards as winter approached. When flying across the wild prairies in the western parts of Canada, doubtless they saw some of the few

remaining tribes of the Red Indians, that wonderful race of people who were owners of the land before the white people came. I hope some day you will make a point of reading about these Red Indians. It is a sad fact that wherever the white man comes, by degrees the natives die out. Even if there are no wars, no cruelties (and in the case of the Red Indians there were both), still it is so. The natives were driven from their hunting-ground, wanted by the settlers for their towns and their fields. But few remain now, and they are but poor specimens of the brave, intelligent race who lived here more than a hundred years ago. Civilised life has not suited them, and, in addition to their own savage, heathen habits, they have copied the white man's vices. Longfellow has written a splendid poem, called "Hiawatha," about these people in their primitive state before the intrusion of the white man. I advise you, whenever you get the chance, to read this. I first did so when I was quite a child, and I cannot tell you how often I have read it since. It is perfectly charming.

(To be continued.)



The Listening Thrush.

"The sound of a voice that is still."



A Handbook of British Inland Birds.—By Anthony Collett, with coloured and outline plates of eggs by Eric Parker. London, 1906: Macmillan and Co., Ltd.; Crown 8vo., 6s.

Whether it is advisable to confine the scope of a popular book on British birds to inland species, seeing how familiar are some of the Gulls even in London nowadays, may well be questioned; but, granting the advisability, the present work will be found to present much that is of great value, to say nothing of the coloured illustrations of eggs—a great boon in any bird book, since eggs are so popular with boys and often so hard to describe. The letterpress deals only with what may be called the regular British birds, omitting the rare stragglers, and is exceedingly well written, being readable without the overflow into “fine writing” which too often annoys in bird books, while the details about nesting-habits are very fully given. The descriptions of the birds are done sketchily, in a style well adapted to the needs of the beginners for whom the work is intended, although now and then they are too slight altogether; and we note one or two cases of actual inaccuracy, as when the hens of the Bullfinch and Chaffinch are described as “duller” than their mates—much of their colouring being absolutely different—while the sex difference in the Siskin is not noted at all.

Tales of the Birds.—By W. Warde Fowler. London, 1903: Macmillan and Co., Ltd.; Crown 8vo., 2s. 6d. Cloth elegant, gilt edges, 3s. 6d.

This book, which is an old favourite that has deservedly run through several editions, is quite the most charming ever written on English birds in its own style—humanised stories about familiar species. It was written, too, years before the writing of such tales about animals became so common as it is now. One or two of the stories have more of the human than the bird interest, and these strike us as not up to the general level of the book. But anything more delightful than most of its contents would be hard to find. Mr. Warde Fowler seems to know exactly what any particular bird would do or say had it a human mind. This comes out most charmingly in the two stories, “A Debate in an Orchard” and “A Jubilee Sparrow.” The personalities of the debating birds, as they discuss the Blackbird’s motion that man is “a mean, mischievous, and malevolent animal,” make the most delightfully humorous reading, and the adventures of the palace-bred sparrow, “Jubilee,” are realistic to a degree. We may quote his snobbish father’s remarks to his mother as a sample of the style: “My dear,” he said, “you mustn’t leave the nest

to-day. You know my hopes and wishes; you will disappoint me dreadfully if you can’t manage to hatch out an egg to-morrow. It really is our duty, as we live in a palace, to have a nestling hatched on the Jubilee day. . . . Remember, I picked you out of a whole crowd down in St. James’s Park, and I made no inquiries about your connections; you may have come from a Pimlico slum, for all I know. But I saw you had good qualities, and I asked no questions.” Anyone wanting a seasonable present for a fellow bird-lover, child or adult, could not do better than send him this book.

A Year with the Birds.—By W. Warde Fowler. London, 1902: Macmillan and Co., Ltd.; Crown 8vo., 3s. 6d.

Quite different in its scope and style from the above work, the present is also a tried volume which has passed through several editions. It deals in a popular, yet scholarly and observant manner, with birds observed in and about Oxford, in a Midland village, and in the Swiss Alps. We can heartily endorse what Mr. Warde Fowler says about the great abundance, variety, and tameness of the Oxford birds; the city is an ideal place for the beginner in ornithology. The remarks on the Warblers—a favourite group with the author—will delight all bird-lovers, but we are hardly in accord with him in his condemnation of the Jay and Magpie; surely colour and picturesqueness should count as well as song. The chapters on the Alpine birds and on birds in the classics are particularly interesting, and will be found very instructive.

There is one point, however, in which exception may be taken to both of these very excellent volumes of Mr. Warde-Fowler’s—the illustrations are not by any means worthy of the text.

Garden and Aviary Birds of India.—By F. Finn. Calcutta, 1906: Thacker, Spink and Co.

This book should fill a place which has long been vacant in the libraries of Indian nature-lovers. Many people there would gladly learn the names and ways of the many beautiful and interesting birds which haunt their gardens in the East, but are repelled by the size and elaborateness of scientific manuals, while very few popular works are available. Information about Indian aviculture is an even greater desideratum, so Mr. Finn’s book will appeal to two classes of readers. He has, in the avicultural aspect of the work, not confined himself to Indian species, but deals with a good many exotic birds which are frequently obtainable there. Fanciers will be interested to note that John Chinaman goes in for canary-breeding, and sends the results to India. The book is illustrated by many black-and-white figures, with the leading colours of each bird noted in print, so as to facilitate recognition. The drawing is decidedly inclined to stiffness, but the figures are quite recognisable.

How to Know the Indian Waders.—By F. Finn. Calcutta, 1906: Thacker, Spink and Co.

The present work appeals pre-eminently to the sportsman in India, but as details are given about the habits of the more interesting species, and their treatment in captivity dealt with, it may also command a wider interest, while the abundance of birds of this type in the East makes reading about them interesting here, where so few are familiar.



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Chirps and Chatter.

THE LITTLE OWL IN ENGLAND.

Recently a specimen of this bird, shot in Cambridgeshire, has been paragraphed in the Press as a "rare visitant," and mixed up with the Scops Owl. The Little Owl, however, is now an established British bird, having been freely introduced in several localities, while, as it is not of migratory habit, it is doubtful if the few specimens recorded before deliberate introductions were made were really natural visitants. In places where this comical little bird is established it is the most conspicuous Owl, as it comes out in broad daylight. This alone makes it a valuable acquisition, to say nothing of its utility as a vermin-destroyer. The Scops Owl, at once distinguishable from the Little Owl by its long ear-tufts, is really to be placed in the category of rare visitors, though at least one brood have been reared in captivity and afterwards given their liberty in this country.

NEW LEGS FOR OLD.

The question of Thrushes "changing their shin-bones" seems pretty frequently to crop up. The phenomenon is not difficult to account for. Thrushes have the horny—not bony—covering of their shanks all in one piece, and in some cases the horny substance will accumulate year after year, till, if it at last flakes off, as it appears to do at times, the bird appears to have really parted with a portion of its legs. This overgrowth of the leg-scales is a common phenomenon with captive birds of many species, and, unless it is due to the absence of gradual and regular peeling or flaking of the scales—if this should be the normal state of things—may be put down to the same unknown cause which makes some cage-birds' nails grow at such a disconcerting rate. This tendency to over-secretion of horn varies much in different species, as all aviculturists know, and even in different individuals of the same species, as anyone may see in canaries.

IS AVICULTURE CRUEL?

In a recent number of the *Country-side*, Mr. E. Kay Robinson has some valuable observations on this point. He draws attention to what has often been stated by aviculturists, that the life of a wild bird is very uncertain, and can only last a very few years in comparison with what a well-cared-for captive can attain to. He gives a striking instance in the cruel persecution, suffered by some free Barbary Doves he had, at the beaks of their descendants, this showing that it is quite possible for a bird's worst foes to be those of its own household. The poor old ancestral pair, when mercifully captured and confined, seemed quite at home in their cage; and, although these are domestic birds, the argument drawn from them is no doubt quite applicable to really wild ones.

A PUFFIN IN SHEFFIELD.

The occurrence of a Puffin in Sheffield in December is a sufficiently remarkable event to deserve notice, although these sea-fowl are more often blown inland than is commonly supposed, and one has even been captured—indoors—in Brook Street in London. The Sheffield bird was saved alive

and turned out on a piece of ornamental water, where it did not long survive. Very likely no fish were to be found there, and, even if there were, a bird which had flown itself to a standstill, so to speak, would hardly be in good condition for fishing. Anyone getting hold of such poor storm-driven waifs should give them a meal of fish—or minced raw meat if fish is not available—before turning them out, even if it should be necessary to cram them with it. The idea that salt water is necessary for sea-fowl is, by the way, quite a mistake.

A TALKING CANARY.

A recent issue of the Edinburgh "Evening Dispatch" reports a talking canary in that city, the property of Mrs. Helen A. Grant. He is stated to say distinctly, "Kevie (meant for "clever") boy, kevie boy; whiskers," and "Where's a wee boy?" in reproduction of the endearing addresses of his owner and her husband. This is not the only talking canary that has been placed on record, though instances have been very few and far between; so that there is no reason for the derision with which Mrs. Grant's friends at first treated the account of her pet. One loses a good deal by being too sceptical at times.

A TAME ROBIN.

Stories of the Robin's innocent confidence in mankind are common enough, but seldom has a more striking instance been recorded than that which occurred to "J. L. C.," a correspondent of the *Scotsman*, on the last day of the old year. In this case the bird alighted on a whip which the coachman was holding in a sleigh which had just stopped, within a foot or two of the narrator's face, and remained there nearly half a minute. One wonders if the bird was hungry, and thus mutely drew attention to his need, and so naturally sympathises with "J. L. C." in his regret that he had nothing to offer his little visitor.

CALAMITIES OF BLUE ROBINS.

After the experience of the hardness of this species in English aviaries, one notes, at first with surprise (though in exceptional winters similar disaster overtakes our English birds), that the scarcity of the Bluebird in Missouri was due to severity of the winter. The following is an abstract of a communication by O. Widdmann in the current issue of *Bird Lore*: The fine warm weather of mid-February brought the majority of Bluebirds back to their breeding haunts, and the cruel snows and weather of March killed them off in large numbers. The scarcity of the birds was apparent as soon as the warm weather came in, and, though it was surmised many had succumbed to the adversity of the weather, proof was not forthcoming till later. Mr. J. T. Volkman found within ten minutes' walk of his house eight dead Bluebirds in one tree hole, six in another, and nine in a hollow telephone post. These charming and hardy birds used to be fairly common inhabitants of our aviaries, but now have become quite rare; their exportation having been stopped by the U.S.A., only a few stray birds leak through occasionally.

A ROOK'S MISCHIEF.

In the January number of *Bird Notes* will be found the first instalment of a very interesting article on Rooks by Dr. Creswell, largely occupied with an account of a tame bird. This worthy was wont to amuse himself, when the doctor's pigeons had had their bath and were drying themselves on the lawn, by cunningly approaching them and startling the whole lot by a dig in the back of one of them. After this he would endeavour, often with success, to upset their bath, on accomplishing which his triumphant caws showed how much he enjoyed his practical jokes. Many people will learn with regret that pressure of other work is compelling Dr. Creswell to relinquish the editorship of the Foreign Bird Club's periodical.

THE EMERALD CUCKOO IN CAPTIVITY.

In the same journal there is a beautiful coloured plate and account of the Emerald Cuckoo (*Chrysococcyx smaragdineus*) by Mr. J. G. Keulemans, who calls it the Bronze Cuckoo. After giving some notes on the bird's wild life in West Africa he mentions that if well supplied with insects it will live long in confinement, though always wild, and that he had kept the subject of the illustration, captured by himself, for two years—he does not say if he brought it to Europe. But in any case, this is the first instance I have read of in which this magnificent little bird, surpassing any Tanager in metallic brilliancy of colouring, has been kept in captivity, though it is too well known as a "skin."

A SANDPIPER AT A SHOW.

At the last show of the West London Fanciers' Association a fourth prize was won by an unusual exhibit—a specimen of the Common Sandpiper. It was thoughtfully accommodated in a long cage with broad perches, and a bath containing sand and water, though, as a matter of fact, for the short period of an exhibition a simple flooring of damp peat or cocoanut fibre would be quite enough. A good many small waders and game-birds would make good cage-birds, and in some countries the latter are frequently kept as such; notably, in India, several kinds of partridges and quails, especially the Grey Partridge (*Francolinus pondicerianus*) and the Common Quail, these being favourites as fighters. Of course the objection to waders is that they need water to wade in, and as they are particularly tameable birds, they are best kept in an aviary, and taken out if wanted for showing.

AN AVICULTURAL TRIUMPH.

It is gratifying to learn that Mrs. Johnstone has (last year) succeeded in fully rearing a young Fraser's Touracou, the specimens hatched during past years having perished before fledging. The nest was built on a hay-covered hurdle in an indoor aviary, and on July 24th a chick was hatched out of one of two eggs laid. Both sexes sat, and the young bird was fed from the crop. The little bird, covered with dark down, was soon able to scramble about on the platform, and it flew on the 18th of August, being then still small. Mrs. Johnstone thinks this is the normal state of things, the young bird hopping actively about the floor. The first plumage was "a dark rusty blue," and no red

feathers appeared in the wings till the bird was three months old. The food on which the young bird was reared was banana, soaked biscuit, grapes, mealworms, and caterpillars, including silkworms. Bread-and-milk was much appreciated.

COLIES AWAITING CULTIVATION.

With this success with Touracous another important bird-family goes off the list of untried exploits for aviculturists; but another awaits their efforts in the shape of the Colies, or Mouse birds, of which several specimens have been imported of late, and one even exhibited. These curious birds are not by any means new to aviculture, and are easily kept, being fruit-eaters; but they have never been bred, and no authority seems to say what the young are like, whereas Sir Harry Johnston had some years back described young Touracous. Colies are small drab birds, with long tails and short bills; their movements are very peculiar, as their toes turn any way, and they crawl and climb like mice. They build an open nest of twigs, and are generally seen in flocks.

THE ORIGIN OF THE BENGALEE.

This subject seems to be under considerable discussion again. It has always seemed to the present writer very obvious that this little domestic Mannikin was simply a derivative from the Sharp-tailed Finch (*Uroloncha acuticauda*), with which dark-pied Bengalees exactly agree except for the white parts of the plumage, which are sometimes reduced to a few feathers only. Dark-pied Bengalees are, however, nearly as rare as whites nowadays, the vast majority of those imported of late years having been cinnamon-pied.



Photo, copyright by]

[W. S. Berridge, F.Z.S.

Fraser's Touracou.

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Our Letter Box.

To the Editor of THE BIRD WORLD, 154, Fleet Street, London, England.

DEAR SIR,—Your BIRD WORLD Magazine is very much to my mind, and you may put down the New York Zoological Society as a subscriber. I was pleased to see the nice notice of our Mr. Stacey. While I have the facts under my hand I am tempted to enclose the figures of our bird collections as they stand to-day. You will notice that we have 26 Orders represented. I am glad to know that Mr. Frank Finn is connected with your magazines. He is a man whose work I admire very much.—Yours very truly,

W. T. HORNADAY,
Director.

NEW YORK ZOOLOGICAL PARK.

LIST OF BIRDS ON HAND, DECEMBER 31ST, 1906.

	Species.	Specimens.
Rheas	1	2
Ostriches	2	2
Cassowaries	2	3
Tinamous	2	5
Game-birds	48	189
Pigeons	31	111
Rails	7	20
Grebes	1	1
Gulls	11	36
Plovers, etc.	7	19
Cranes	9	17
Hérons	22	76
Screamers	1	3
Flamingoes	2	9
Ducks, etc.	45	333
Pelicans, etc.	9	25
American Vultures	5	12
Eagles, Hawks, etc.	19	40
Owls	15	29
Parrots	40	101
Hornbills, Kingfishers, etc.	2	5
Trogon	1	2
Cuckoos, etc.	2	3
Toucans, Barbets, etc.	4	5
Woodpeckers, etc.	3	3
Passerine birds	184	1,053

Total: 481 Species, 2,104 Specimens, 26 Orders.

C. WILLIAM BEEBE,
Curator.

To the Editor of THE BIRD WORLD, 154, Fleet Street, London.

DEAR SIR,—I have always understood that hybrids could not reproduce, it having been so ordained, in order that species should remain distinct. But I have read that fertile hybrids have been produced, in some cases, between the Gold and Amherst Pheasants, for instance. How does this square with the usually accepted theory? One would think that two species which produced fertile hybrids like these would get mixed up, as both come from China, according to the bird books.

INQUIRER.

The Kingfisher.

By F. FINN, B.A., F.Z.S., M.B.O.U.

(Continued from page 47.)

A Bad Cage Bird.

It must be borne in mind, however, that the Kingfisher is utterly unsuited for prolonged cage-life; and this not only because it makes much dirt and requires a plunge-bath for its ablutions, but because it does not hop about, but only flies from one perch to another, and hence cannot take much exercise in a small space.

In a large aviary provided with a pool, however, it will thrive, and has even bred, so I was once told. There may be some difficulty in selecting a pair. The hen is said to be duller and greener than the cock, but the difference is not at all obvious, and it must be remembered that only a true pair will live together, the Kingfisher being one of our most quarrelsome birds. Breeding accommodation would require to be in the form of a bank of soil of suitable consistency for burrowing, in which a few holes might be begun to encourage the birds to nest. Care must be taken always to supply some fish in a shallow pan, unless the pool is very shallow, as the birds cannot take fish in deep water unless these happen to be near the surface.

In any case, I hope these lovely birds will not be taken even for avicultural purposes except in a locality where they are doing damage, i.e., in a fish-culture establishment. Everywhere else this stray sunbeam from a brighter zone should be held sacred as much from the net as from the gun.

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The Kentish Plover.



This little bird much resembles the Ring-Plover, but lacks its black face-markings, and has black instead of yellow legs. It is a local bird, and only breeds in a few places on our Southern coasts. Being smaller and weaker than the Ring-Plover it is often bullied and driven away by that species.

The Dipper

(*Cinclus Aquaticus*).

By S. A. SANDY.

This species is one that is rarely met with in captivity, and, I fear, little is known of its habits even when at liberty except by a very limited number of fanciers. Its chief haunts are in the vicinity of fast-running streams, and, so far as my information goes, there are few suitable localities in the midland and south-eastern counties. I have never heard of any specimens being taken near London. On the streams in Yorkshire it is fairly common and breeds freely; it also breeds in suitable spots in Derbyshire and most parts of Wales, whilst I am told it is frequently met with on the Scottish burns, where it may be seen perching on the large stones that rise a few inches above the water.

The nest is a somewhat cumbersome affair, composed of grass, moss, and leaves, and usually has an inner lining of dead leaves.

NESTING OPERATIONS.

The Dippers commence their nesting operations as early as February if the weather is at all favourable, and rear two, and sometimes three, broods during the season. The family usually numbers four or five, so that the old birds may be said to be kept busy while the nesting operations last.

There is practically nothing in the plumage to guide one in distinguishing the sexes, although in my opinion the hens are a trifle smaller and duller. In the adult male the head and nape of the neck are brownish, with the flights and tail a rusty black, throat and upper part of breast pure white, the lower part of the breast being a rich chestnut shading to black on the flanks and underparts, back black with greyish mottlings, bill black. The flight feathers are rounded like those of the brown Wren, which this bird much resembles in general appearance, and particularly in the carriage of the tail, which is short and points upwards.

When perching on a low post or stone the wings are dropped slightly, and the tail spread like a fan. When moving on the ground the Dipper is awkward in appearance. It walks similarly to the Starling, except that it curtsies almost to the ground every few feet it goes. It does not hop like a Thrush or Blackbird, but when going short distances it takes a flying jump from place to place. It is about the size of a small Thrush when full grown, but scarcely appears so large owing to the short tail.

YOUNG ADVENTURERS.

I was fortunate enough last spring, through the medium of the advertisement columns of "Cage Birds," to obtain some young hand-reared specimens about a month old. They were fully fledged and picking up well. In their

nest-feathers they were very different in plumage from the adult bird I have described. They might very well be described by saying the head and upper parts were black, with whitish margins to the feathers, and the throat and breast creamy white, with fine black streaks, the flanks and belly almost black. I parted with two of my stock to a well-known fancier, but, like myself, he was unable to keep them alive long, one dying the following day.

CAGE ACCOMMODATION.

I kept my bird in a cage 2 feet 6 inches long, 1 foot deep, and 18 inches high, covering the cage bottom with sand about an inch deep and moss. I used two perches, one near the bottom and one rather high up. I also turned a small flower-pot bottom upwards, and stood it in the centre of the cage. I kept a bath 9 inches square and 1 inch deep always hung on the cage-front for the bird to walk about in. Immediately I put a fresh supply of water in the bath the Dipper was into it, putting its head under the water, and going round the bath pecking at the sides under water. It then used to settle down to a fine splash, which, although good for the bird, was anything but desirable for the cage, which soon contained more water than the bath.

FEEDING METHODS.

When I first had the bird I was very much concerned as to the best food for it, but decided to start with a mixture of soaked puppy biscuit, dried flies (a liberal supply of these), ants' eggs, and a little hard-boiled egg, together with a good supply of gentles and chrysalides, and a few mealworms. I used to put the gentles, etc., into the water, and the bird would pick them up from the bottom. It appeared particularly fond of the chrysalides. I also tried a few small earthworms, but although it would occasionally eat one it was not at all keen about it.

The fancier through whom I obtained the birds went to some trouble to ascertain definitely what the young were fed upon. He placed a very fine net at the entrance of an arch containing a nest with young, and when the old birds struck the net, when returning with food, they were captured, and both had a small worm known amongst anglers as "Strawbait"—possibly so called by reason of its floating on top of the water in a piece of dry grass or small curled leaf.

The "Strawbait" is the larva of the Caddis Fly. A second nest was tested in the same manner, and the old birds were found to be using similar food. This insect would therefore appear to be the natural food of the Dipper. The

Caddis-worm is very similar in size and colour to the mealworm, which is too well known to all bird-keepers to need description.

THE OUTDOOR TREATMENT.

On the food I have described my Dipper thrived, and after keeping him about a month in the cage I cleared an outdoor aviary of its occupants and placed the bird in it. The floor-space was 6 feet by 2 feet, and the height about 7 feet, so that it could take plenty of exercise. In addition to the ordinary perches, I put in several flower-pots the reverse way up, and some bricks on end, and these were more often used than the perches, except for roosting. I used a large zinc pan for water, 18 inches across by 4 deep in the centre, and when any insects were thrown in the bird would take a flying jump from the nearest flower-pot into the centre, and quickly get them out. It appeared to revel in water, and during the day was more often in the bath than out of it.

Towards evening on June 24th, when about two months old, it commenced to record its song, which was similar to that of a young Thrush, although perhaps rather more of a warble. In a week from starting the notes became quite loud. About this time I had another specimen of the species, which I placed in the same aviary, and although they fought a little at first, they soon became on good terms and did well for a bit. One, however, would persist in roosting close to the wire, and for safety I cleared another aviary with glass round it, and removed the two to it.

The floor of this one was wood covered with cocoanut fibre, which I kept well damped. I put in the flower-pots, etc., but after a few days the two birds began to show signs of what appeared to be cramp in the legs, and gradually got from bad to worse, refusing food, even gentles and mealworms, and to a great extent forsaking the bath. After being in the second aviary about ten days one died, and a week later the other also. Both were very thin.

A Question of Flooring.

The floor of the first aviary was covered with tarred felt, into which had been pressed a good quantity of grit and sand, making it very much like an asphalted path, and it was suggested to me that this species—in fact, all species of water birds—will not live long upon a wooden floor. Cement or earth would have been far better, and less likely to cause them to go crampy. I am inclined to think the wooden floor was to a great extent, if not wholly, responsible for my birds' death.

I am fairly satisfied that my feeding was not much at fault, or they would not have thriven upon it so long as they did. I heard of one or two other fanciers trying their luck with Dippers, but I believe my specimens survived the longest. Several attempts have been made to keep them in the aviaries at the Zoo, but I am told the percentage of deaths has been very

high; and the old birds are very shy, and it is not often visitors can get a good look at them.

ADAPTABLE TO CAPTIVITY.

From my experience I am quite convinced that Dippers are adaptable to captivity if hand-reared, and would make very interesting occupants for an outdoor aviary, which, I think, is their proper place. Some experienced fanciers insist that they cannot be kept, but from my recent trial I disagree with them, and should be very interested to hear from any fanciers who have tried what their experiences have been. I do not think they could be kept in an ordinary

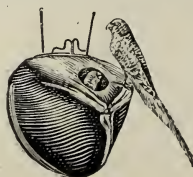


[W. Teschemaker.

Young Great Tit looking out of nest.

cage, although it would of course be quite possible to show a Dipper the same as a Thrush.

I do not recollect ever seeing a Dipper on the show bench, where I am sure it would be attractive, and no doubt stand very high up in the awards. All being well, I shall try again next year under altered conditions, when I shall hope for better results.



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Canary Management.

By WM. FAIRLIE.

Having decided to make the pleasing and instructive hobby, Canary breeding, your pastime, the first thing to do is to provide suitable cages to keep the birds in when purchased. There are a great many varieties of cages, both for singing and breeding. Where a bird is kept for singing purposes only, I should recommend a square cage, with the back, top and sides made of wood, the front part only being of wire. This kind of cage will be found the best for all ordinary purposes, as it protects the bird from a direct draught, a thing which must be jealously guarded against.

How to Buy.

In buying birds, the best plan is to go to a respectable dealer's establishment, or to some well-known breeder; you are then sure to be well served, as these men have their reputation to keep up, and will always warrant what they sell. When ordering birds from a distance, to be sent by post or carriage, always have them on approval. Of course, the prices of birds vary according to quality and breed, but I should strongly advise the beginner to buy the best his pocket will admit of, as it costs no more to keep good-quality birds than inferior ones; besides, it enhances your fame as a breeder of good stock, which is a qualification for the selling of your surplus birds.

Signs of Health.

In selecting a bird, always see that it is in perfect health, lively in its movements and free from panting when breathing, and that there is no wheezing in the throat or chest; as it is a loss of time to attempt to breed with unhealthy birds, the result being, as a rule, unfertilised eggs or the hens becoming bad sitters or feeders. Should any birds be reared at all, as they get older they mostly become affected with the same diseases as their parents suffered from, which, if not eradicated, become hereditary.

The Norwich Canary.

The Norwich canary is what might be termed a chubby bird, although of late years they have slightly increased in size. In colour, it varies from a pale lemon to a very deep golden yellow, and is a sound-constituted bird, very lively and active, rather slender in build, but with a full neck and chest; it has a loud and melodious song. The head should be broad and flat on top, the wings perfectly V-shaped and not overlapping; the feathers should be tight and compact and of a silky texture; in carriage it should stand semi-upright, and be lively and quick in action. Size, too, is a consideration, providing the bird retains all the true points of the Norwich and is not too coarse in feather.

Method of Pairing.

The general rule is to pair yellow with buff. It is quite immaterial which bird is the one colour and which the other, but all clear birds should have a perfectly clear underflue. The yellows produce the colour and silkiness of feather, whilst the buffs add tightness and compactness. A cross with a good green now and again is very beneficial to the strain, and should always be resorted to, as the greens are the fountain-head of colour.

Crested Norwich.

There are two kinds of crests in the Norwich variety, the dark, and the grey or grizzle, the dark being most fancied and the most valued. The crested bird is rather full-bodied, with plenty of feather, and has a large and flat skull—a desideratum in this variety, as the bigger the skull the larger and fuller the crest will be. The saddle and back should be broad, and the feather tight and close, the body-colour being clear and bright. The Norwich crested birds are, however, always inferior in colour to their confrères, the plain-head variety.

Shape of the Crest.

A good crest should have a well-defined centre, the feathers all lying perfectly flat and drooping gracefully over the beak, eyes, and down the back of the neck, and without the slightest perceptible break. Crests vary in shape and size; there is the oval crest, the circular crest, and the shield crest. It is advisable now and again to cross with a Lancashire Coppy to produce size and feather.

Points of Yorkshires.

The head of the Yorkshire should be round, narrow, and of medium size, and the eyebrows must not show the slightest tendency to overhang; the neck long and straight, with no indentation to be seen between the shoulders; in fact, from the top of the head, along the back to the tip of the tail, there should be a straight and unbroken line. The body should be long and slim in build, the feather compact, tight and fine in texture; the bird should be rather long and straight on its legs, and very lively and business-like. The Green Yorkshire is valued for the purity and brilliancy of its colour, and should be without any black feathers in the back; this makes a very good cross when colour is desired. The dark feathers in the tail should be very glossy, the colour of the body feathers a brilliant green and even all over, and birds of this colour should bear the same characteristics as the clear varieties.



Even-Marked Yorkshire Canary.

Treatment of Breeding Birds.

The best time for pairing the birds is the first week in April; this is quite soon enough, and gives plenty of time for the hens to rear three nests before the moulting season sets in; a great many of the failures which occur every year are through breeders being over-anxious to pair. A week or so before pairing, the birds should be given a more nutritious diet than their ordinary food, such as stale bread-crumbs or powdered biscuit mixed with hard-boiled eggs; the egg should be grated through a small sieve. Also a few grains of hemp, and a little niga seed, and water-cress given every other day will be found very beneficial. This extra nourishment brings them on to lay much quicker, and greatly assists in fertilising the eggs.

Management of Laying Hens.

The birds having been paired a few days, you may look forward to the hens building their nests. The hen generally lays her eggs between five and eight in the morning, and these, as a rule, are four in number, but sometimes five; they are all laid one every morning, but sometimes a hen may miss one morning and lay the next. The best plan is to take the eggs out of the nest every morning as they are laid, and put them carefully in some dry bran in a box kept for the purpose and divided into sections, these being numbered to correspond with the cages. Put the eggs back again into the nest in the evening of the day the third egg is laid; by this means the young birds will generally hatch out at one time, which is a most desirable thing, as birds which are hatched a number of hours before the others, of course get more food, and consequently grow and get much stronger than those hatched later.

Egg-binding and the Remedy.

If, on the morning you expect a hen to lay, you find her at the bottom of the cage with her feathers ruffled up and breathing very hard, she is most probably what is called egg-bound, and must be attended to at once. Get a little castor oil and warm it at the fire, and apply a little to the vent, placing the bird gently back again on the nest. This will generally relieve her of the egg in about an hour; if not, she should be held over a jug of boiling water for about ten minutes, the steam being allowed to penetrate all round the abdomen. By this method the egg will sometimes be laid in the hand, or it will drop in the jug, or very soon after she is placed in the nest. Great care must be taken in handling the bird, that the egg may not be broken by any pressure of the hand before it is laid, for if the egg is broken in the oviduct, it will certainly kill the hen.

The Trio System.

Many breeders run two hens with one cock; this is one of the advantages of using the double breeding-cages. In breeding on this plan, it will be necessary to hang two nest-pans in the cage, one at each end, leaving the sliding partition open for the cock bird to pass to and fro. It sometimes happens that the hens will not agree at first, for a little jealousy springs up between them; but the cock bird will very soon settle matters between them, and in a few days they will become perfectly friendly to each other, and go about building their nests.

Rearing the Young.

When the young birds are hatched, you should take a look at the nest the first thing every morning, to see that the young ones are all right and that none have died; a good supply of egg-food should always be kept in the cage, and should not be allowed to turn sour, as this will be certain to produce diarrhoea, which, if not noticed in time, will kill off the birds quickly. A little green food should always be placed between the wires for the hens to feed with, care being taken to remove all stale pieces from the cage. When fully fledged, the young birds get a bit restless and stand on the edge of the nest-pan. A watchful eye should now be kept on the hen, as she will be thinking of going to nest again, and some hens pluck the feathers from the young birds to line their new nest with. This must be avoided by giving the hen plenty of nesting material, and by placing the young birds in a nursery-cage hung on the wires of the breeding-cage; the parents will then feed them through the wires, and the cock will look after them when the hen has gone to nest again. A little egg-food and a little crushed seed should be supplied to the young birds to peck at and to teach themselves to feed with.

Weaning Fledged Youngsters.

When they are about six weeks old they can generally crack seed themselves, and should be gradually weaned off the cracked seed on to the ordinary canary and German rape seed and egg-food, and placed in a flight-cage or aviary to grow as much as possible before the moulting season sets in.

Colour-feeding.

The best time to begin giving colour-feed to either old or young is before they are actually in the moult; as, when the feathers begin to drop, it is a sign that the roots of the new feathers have displaced the old ones, showing that the new growth had begun its operations some time previously, and that the birds should have been colour-fed, so as to get even colour throughout. In commencing to colour-feed young birds, it is necessary to begin doing so early. The first nest should be ten weeks old, the second eight weeks,



Common Singing Canary.

Portrait of a bird nearly twelve years old.

and the third six weeks old, when put on the feed. For old birds it is more difficult to find out the exact time, as they will have to be watched more closely. If they are given the feed about the middle of July, especially the cock birds, you will most likely get the best results. The hen birds, if to be colour-fed, will require more watching, as they may be feeding their last nest of young, in which case it will have to be delayed till the young are fledged.

Composition of Colour-feed.

The general practice in giving colour-feed is to give it mixed with egg-food, the same as is given to hens when feeding their young; adding a good teaspoonful of colour to one hard-boiled egg, and about the same quantity of crushed biscuit or stale breadcrumbs, well mixed together, and giving to each bird about a good teaspoonful of this mixture daily. After the birds get more used to this, add more colour gradually, till a good teaspoonful to one egg, etc., is reached. Continue giving daily doses regularly till it is seen that the old body feathers are all moulted; in fact, that all the feathers are moulted, save those of the head, which is always the last part to moult. This is the time to stop their feed gradually, so as not to get the head too fiery a colour in contrast to the body.

The Toilet of Show Birds.

The process of washing is rather a difficult operation to tackle at a first attempt, and requires a deal of care in handling the bird, as sometimes, with those who have had no experience, it has very painful results. To those who are accustomed to it, it is a matter of small moment, but even then there is a considerable amount of skill required to do it thoroughly, for if a bird is only half-washed it will certainly look far worse than if it had not been touched at all. Birds should never be washed more than is actually necessary, but when sending them to shows it becomes imperative, if you wish to stand any chance of winning. It would be very advantageous to the beginner, if he has the opportunity, to watch some experienced fancier perform this operation, as he would learn more by seeing it done than in any other way. When this is not possible, it will be found best to proceed in the following manner. Make up a good fire and rake all the dust from the bars, getting the fire as clear as possible and placing a kettle of water thereon to boil.

Washing Accessories.

Next get two or three chairs to put the washing utensils on, and a low stool to sit on, and place them near the fire. Put a large open-fronted cage, with two or three perches across, and scrupulously clean, on the fender to warm, with a perfectly clean duster or so placed inside on the bottom for the birds to lie on whilst dry-

ing. Cover this over with a light towel or piece of flannel to keep the heat in. Two medium-sized basins will then be required to wash the birds in, one for washing and the other for rinsing, and a piece of soap. Use a badger-hair shaving-brush for washing them with, as the hair is very soft and does not injure the bird's eyes like most other brushes. Place two or three towels on the fender to warm for drying the bird on, and fill a jug full of cold water, to make the bath of the proper temperature (about 80 degrees); and, last, but not least, wash your hands thoroughly clean. The operation of washing should be done close to the fire, and all doors should be closed to keep any draught from the drying cage.

How to Proceed.

Catch the birds which are to be washed, and put them into a cage all together, covering it over if they begin to quarrel, in case they should damage one another's plumage. Take the least valuable bird first and hold it in the left hand, with its head between the finger and thumb, the tail lying along the wrist. Dip the bird into the warm water and rub the brush on the soap and commence to wash the back and neck first. Don't be afraid to rub the soap well in. Proceeding gradually along the sides of the wings to the tail, next wash the head, top of beak and sides of neck; and as this part is mostly the dirtiest, it will require a lot of working to get the dirt thoroughly out. Having done those parts thoroughly, turn the bird over and wash the throat and under part of the neck, proceeding along the breast to the tail again. Then rinse the bird well in the other basin of warm water, as the soap must be got thoroughly out of the feathers. Having completed this part successfully, place the bird in one of the warm towels, quite close to the fire, and get as much water out of the feathers as possible, finally putting it into the drying-cage. Birds become very much exhausted under the operation, and the beginner may think that the bird is going to die, but by handling it carefully when undergoing the process of washing, and taking care that it doesn't get a chill, in about a half-hour after it is placed in the drying-cage it will be seen trimming its feathers and looking quite brilliant again.

Rectifying Defective Feathers.

Sometimes a feather of the tail is a little bit curled or twisted at the end when dry. Should this be the case, give the bird a little water to bathe in; but if this should not rectify it, put the feather or feathers into a little warm water, and draw them gently between the fingers and thumb a few times. This will generally put matters right. Occasionally, a wing or tail feather may get damaged or broken, and, should this happen, it is best to draw the quill out; but until it grows again the bird will not be fit for show purposes.



Reed Bunting (in winter plumage).

The Reed Bunting in summer is a conspicuous object among water-side vegetation, and further draws attention to himself by his peculiar stammering attempts at singing.

A History of Birds.

By W. P. PYCRAFT, A.L.S., F.Z.S., Etc.

(Continued from p. 44-)

CHAPTER I.

Birds, then, in the possession of feathers, are unique in the scheme of nature; so that by this character alone we may distinguish them from all the remaining back-boned animals, while there can be no sort of doubt but that they owe their descent from some reptilian ancestor.

Let us now pass on to consider one or two other peculiarities of birds; peculiarities which have gone on developing and perfecting since the time of splitting off from the reptile stock.

THE STORY OF THE WING.

Surely the most important of these is to be found in the fore-limb. This we know as the "wing." Even stripped of its feathers, we could trace the wing of the bird from the fore-leg of any other animal. Yet it cannot be used as an absolutely distinctive character, since in some of the Ostrich tribe, for example, it has become degenerate, and so reduced in size as to be hardly recognised; while if we take fossil forms into consideration, we shall find that it becomes still more dwarfed, until, as in the Moas, it is lost altogether.

The principal features in which it differs from the fore-limb of other animals are to be found in the bones of the wrist and hand. In the wrist only two separate bones can be found, though in the embryo the rudiments of several can be made out; these disappear, however, before hatching takes place. The bones of the hand and fingers are reduced to three in number—the thumb and

first and second fingers. The first portion of these finger-bones—which answer to the bones that, extending between the wrist and the bases of the fingers, make up the palms of our hands—are firmly welded together, the base of the thumb being hardly traceable. The second and third are welded together at each end, enclosing a space, while the finger joints are represented, in the second finger by two, or sometimes three bones, and the third by one bone only.

This very remarkable wrist and hand have reached this unique stage of development as a response to the peculiar needs of the bird's flight, the hand being drawn out into a long rod, across which the bases of the quill-feathers are securely lashed by ligaments.

PROCESS OF TRANSFORMATION.

The wing, no less than the rest of the skeleton, furnishes convincing evidence to show that the bird, as we see it to-day, has acquired this form by a slow process of transformation. In many birds, as in the Duck, the Water-hen, or any of the Hawks, there will be found on the thumb and the tip of the second finger, a small claw—the last remaining vestige of a claw that was once useful. In some other birds, as in the barn-door fowl, for example, similar claws will be found only in the embryo—i.e., the developing chick before it leaves the egg—though quite commonly the thumb-claws persist throughout life. Examine the wing of the next fowl you come across, and likely enough you will find it. Now if we go back to the Archæopteryx, we shall find that the wing possessed a large claw on each of its three fingers. And more than this; in this ancient bird we find that the second row of wrist bones—those at the base of the fingers—though welded together to form a half-moon-shaped bone, yet remained distinct from the fingers. They, in fact, retained throughout life the condition which is met with to-day only in very young birds. When a yet more ancient bird than the Archæopteryx is discovered, it is safe to predict that a yet more complete series of wrist bones will be found. We shall, in fact, have all the links from the reptile to the present day bird.

HIGH TEMPERATURE OF BIRDS.

In one particular the bird and the reptile are very different, inasmuch as while the reptiles are "cold-blooded," the birds are hot-blooded creatures; indeed, in this matter they outdo the mammalia, the temperature ranging from 100 deg. to 112 deg. The highest figure is attained by



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[W. S. Berridge, F.Z.S.]

The Frigate-bird at the Zoo.

The Frigate-bird shows the wing at its extreme development in point of size, this bird spending most of its time in the air.



Photo copyright by]

[W. S. Berridge, F.Z.S

White Penguin, "eye-and-wing marked."

In Penguins the wing is well-developed, but does not fold, and is only used as a swimming-paddle.

the smaller perching birds, such as Finches; Hawks do not maintain a temperature above 109 deg., and Gulls only a little above 104 deg.

This rise in the temperature of the blood which, as we have said, we meet with first in the birds, is due to several causes which are too technical to be discussed here in detail. But chiefest among them we may count the fact that the heart of the bird, like that of the mammal, is a four-chambered heart, whereby a more perfect oxidation of the blood is possible than is the case with the reptiles, which have but three chambers. That is to say, the impure blood brought back to the heart is, when passed through a four-chambered heart, thoroughly purified by the air drawn in by the lungs, and is sent back over the body without mingling with the returning impure blood. In the reptile this mingling is unavoidable, and consequently a smaller quantity of the heat-giving oxygen is brought into the system. But, strangely enough, the blood of the reptiles and birds agrees in this, that the little red bodies, or "corpuscles," whose duty it is to absorb the air from the lungs and the carbonic acid from the tissues of the body, have each a central "kernel" or "nucleus," whereas the blood corpuscle of the mammal has no nucleus.

It would be wearisome to expand further this question of the temperature of the blood, since

to thoroughly understand this matter a somewhat intimate knowledge of physiology and chemistry is required. It is, in short, a question for the physiologist and the medical man, rather than for the ornithologist.

It may seem that this answer to our question, "What is a bird?" has taken us rather far afield. And in this account it may be well briefly to summarise the facts which have been gleaned on the journey.

BIRD CHARACTERISTICS SUMMARISED.

In a few words then, a bird is a warm-blooded; egg-laying, feathered biped, having the fore-limbs modified to form wings, and the hip-girdle so adapted as to bring the hind-limbs far forward, to balance the body in walking. These characters, there can be no reasonable doubt, have gradually come into being by the slow transformation of a long chain of creatures which, as we trace them back, grow less and less bird-like, and more and more like reptiles. Though many links in this chain are yet missing, some day they will almost surely be found.

The evidence for this reptilian descent is abundant. Every bird, in the course of its growth from the egg onwards, passes through more or fewer of the ancestral stages, and while some of these carry us back to phases of development which belong to ancient types of birds long since extinct, others carry us yet farther, and show, in a way that makes contradiction mere stupidity, that the birds and the reptiles have descended from the same common stock.

Those who are not naturalists, who have had no practical experience in the breeding and mating of animals, often fail to see the force of this evidence. It is otherwise, however, with those who have traced out for themselves the intricate problems of pedigrees, for the nature of the evidence and the line of reasoning which apply in tracing descent back a few generations, apply also in tracing back a thousand, or ten thousand.

(To be continued.)

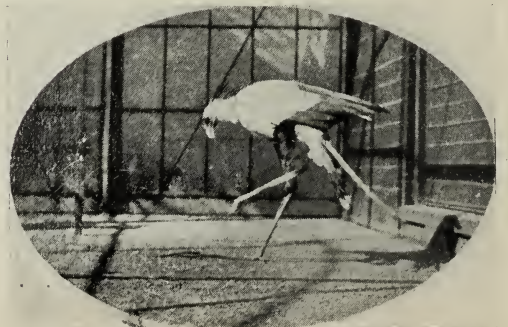


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[Lewis Medland, F.Z.S.

Secretary-bird killing a Snake.

"The Worshipful Company of Scavengers."

By FRANK FINN, B.A., F.Z.S.

We are all of us familiar with the proverb which tells of the futility of "waiting to step into dead men's shoes," but over a large part of the world ranges a numerous class of birds whose main occupation consists in taking a bird's-eye view of their locality in the hope of profiting by mortality among the residents. Of these, the Vultures are the chief, and under this name are grouped two distinct families of birds, those of the Old World being different from those of the New.

FAMILY DIFFERENCES.

The distinction between these two groups of Vultures has been laid down by anatomists, but anatomical knowledge is not necessary to enable one to distinguish them—or indeed, any other natural family of birds. On comparing the Vultures of the two continents, it will be noticed that those of the Old World have the nostrils separated by a partition, as in most animals, while in the New World forms you can look right through the beak if you get the bird's head against the light. Moreover, the American Vultures have much smaller hind-toes than the Old World ones, and have all the front toes joined at the base by a short web, while in the Old World birds only the two outer toes are thus united.

DISTINCTION IN HABITS.

The true Vultures of the Old World build large nests of sticks, etc., but the American birds lay on the bare ground or rock; they are also almost voiceless, whereas the others can utter loud sounds. In all the points in which the true Vultures differ from their American representatives, they agree with the Eagles, and they may be safely placed as near relatives of those magnificent birds. It must be remembered that even Eagles are not above feeding on carrion, though the Biblical Eagles which gathered about carcasses are believed to have been Vultures.

THE QUEST FOR CARRION.

In their general feeding habits, Vultures are much the same everywhere. They are splendid flyers, and may be seen wheeling and sailing about in an apparently effortless manner all day long; this argues that food is scarce with them; for after feeding they are very sluggish, and settle down to digest their meal—often a very big one, for they make the most of any opportunity. They appear to discover their food almost entirely by sight, and, even if any given bird does not happen to see a carcase himself, he stands a good chance of noting another Vulture or other carrion-bird which evidently has done so, and hastens to follow its course. Often he finds there is not enough carcase to go round, and so has to fight for his highly-flavoured repast.

REGAL AUTHORITY.

It is a curious fact that both in the Old and New Worlds there are species of Vultures which exercise authority over others, and claim the lion's share of what is going. In America the lordly bird is the King Vulture (*Gyparchus papa*), which rules over the common Black Vultures (*Catharistes atratus*), and the Turkey-Buzzards. In India the fine Vulture called at the Zoo the Pondicherry Vulture (*Otogyys calvus*) exercises a similar authority over meaner scavengers, and it is noticeable that in both cases the royal bird is not only larger and stronger, but more brilliantly coloured than his subjects. The illustration on our cover this month gives a good idea of the hues of the Indian representative of vulturine royalty.

PLEBEIAN VULTURES.

The Kolbe's Vulture of South Africa (*Gyps kolbii*) is a type of what may be called the ordinary or average Vulture; the Egyptian Vulture (*Neophron percnopterus*), however, is a degree lower; it is a small bird for a Vulture, not being larger than a big fowl, and has to put up with such meagre food as ordure or even rotten fruit, being driven from more substantial diet by the larger Vultures where these are found with it, though it is only too glad of a snack of dead meat if it can get such a treat.

THE LARGEST BIRD THAT FLIES.

The Condor of the Andes (*Sarcorhamphus gryphus*) has the reputation of being not only the largest of the Vultures of either hemisphere, but the biggest of all flying birds. It is doubtful, however, whether it really deserves this position, for although a powerfully-built bird, with an expanse of wing of about nine feet, it is certainly not nearly so tall as some of the Storks and Cranes, and probably much less heavy than the great South African Bustard (*Otis kori*). The specimen in the picture is a young hen, dark brown in plumage; but the male is a finer-looking bird, having a comb and dewlap, while both sexes when adult are black with white secondary quills.

The primary quills of the Condor are exceedingly large and strong, being, indeed, the biggest found in any bird. These great quills are sometimes seen as ornaments in ladies' hats, and, much as we may reprobate the killing of so majestic a bird for this purpose, it would seem that in some places its numbers need keeping down, as it is more ferocious than most Vultures, and not infrequently attacks living animals, such as calves and other farm stock.

REPRESENTATIVE SCAVENGERS.

Photographed by W. S. BERRIDGE.

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1. Kolbe's Vulture (South Africa).
2. Hen Condor (South America).
3. American Black Vulture.

4. Egyptian Vulture.
5. American King Vulture.
6. Indian King Vulture.

The Racing Pigeon.

A Study in Pigeon Instinct and Endurance.

By H. KENDRICK, Jun.

The average Englishman has very little idea of what the Racing Pigeon can do. Its feats of endurance, its astonishing intelligence, and its astounding speed are not generally realised as anything out of the ordinary. In this article I am going to point out some remarkable features of this home-loving bird, and to give you some photographs of pigeons which have done some of the best flying in the country. This is not a practical note on the method of keeping these birds, though the writer is guilty of having written a brochure on this, but it is an article containing authentic records, and is as free from technicalities as possible, so that others than fanciers may read and understand.

In the Home of the Breed.

First of all, let me explain that the Homing Pigeon is a bird which will return to its home from great distances and at great speed. Originally the sport of Belgium, pigeon-flying is now the hobby of this country, and attracts not only the commoner, but the nobility of the land as well. The Prince of Wales is the possessor of an excellent loft of these birds, and the sport of pigeon-racing may truly be styled "the hobby of kings and peasants."

In Belgium, five hundred miles is by no means an extraordinary distance for a Homing Pigeon. Greater distances than these have been traversed, birds having been flown from Madrid to Brussels, about 835 miles. The flying of Homing Pigeons has made enormous progress in Belgium. Early in the last century amateurs risked their birds in races of from three to five hundred miles, but the birds flew at a speed half of that attained to-day. Now, in Belgium alone there are over two thousand societies formed for the purpose of furthering the sport! The number of pigeons flown in the Belgian races is so large that special trains have to be employed to carry the hampers. In a race from Santeuil in 1886, the number of young pigeons competing was 3,701, and a return shows that the number of pigeons despatched from two Liège stations during 1886 reached the enormous total of 1,045,625. In November, 1887, the late Queen's jubilee year, 20,000 were released at once in the Parc Leopold, and Belgium claims about twenty journals devoted exclusively to the Homing Pigeon. This shows its popularity in that country.

Races from England to the Continent.

England to Belgium has often been tried as a racecourse, and, speaking generally, the races have been successes, though England's unrelia-

ble atmospheric condition is against pigeon flying as compared with the more equable condition of other countries. However, the records have it that in 1887 a society at Termonde arranged two races, one from London and one from Paris. Twenty pigeons were sent to Messrs. Hartley and Sons, of Woolwich, for liberation, and were tossed at 8.40 a.m. (English time) from the summit of Shooter's Hill. The first arrived home at 1.14 (Belgian time), and nine others at 1.45, not a single bird being lost. The velocity was 1,177 metres per minute. Twenty other pigeons were sent to Paris, which, of course, is not so far, and were liberated at 8 a.m. on the same day. The first arrived at noon with a velocity of 1,120, and was quickly followed by the rest.

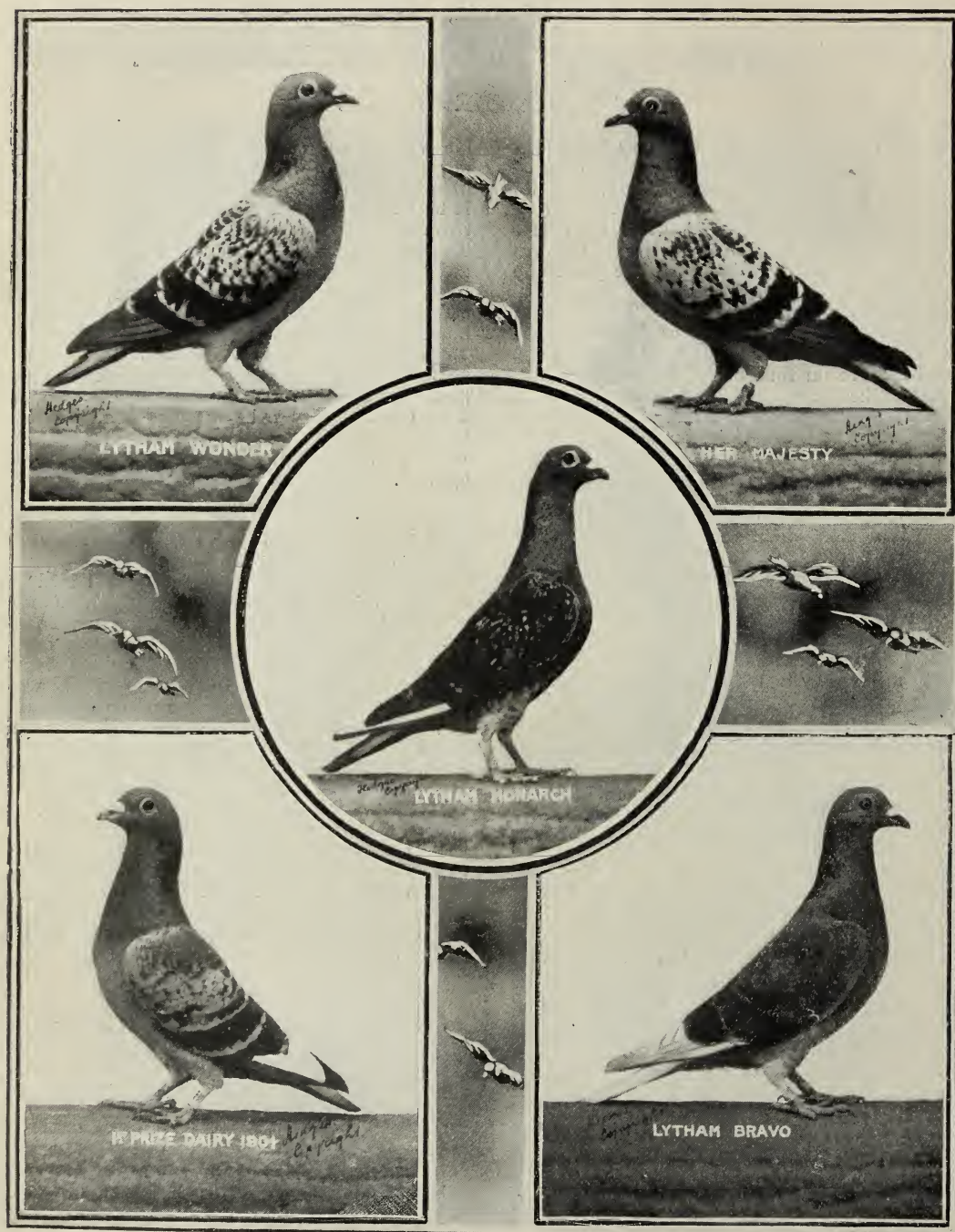
America to the Fore.

It is interesting to note that the American flying records are well to the fore. "Red Whizzer" is the name of a wonderful bird belonging to Mr. R. L. Hayes, which in 1888 beat all previous records by flying from Pensacola to Philadelphia, a distance of 935 miles. In a pleasant little book called "Belgian Homing Pigeons," it is recorded that ten birds were started in this memorable race, being liberated at 7.30 a.m. on July 21st. "Red Whizzer" was found in his loft at 7.15 a.m. on August 2nd, having been out 15 minutes short of 12 days. A second bird, "China Bill," from the same city, was found in its loft on August 9th. It is remarkable to note that this performance was beaten in the same year by two birds belonging to Mr. S. Hunt, which flew from Montgomery, Ala., to Fall River, Mass., a distance of 1,040 miles. These flies have been duly authenticated and can be taken as reliable records of what a patient, plodding pigeon is capable of.

Some English Worthies.

I must now turn to some English records, and before proceeding further I will introduce to my readers the pigeons, illustrations of which, taken from life by the camera, accompany this article. These pigeons are the property of Messrs. D. Hedges and Son, of Lytham, by whom the photographs have been taken and whose copyright they are. I think it will be agreed that pigeon photography cannot be much improved upon, judging by the beautiful pictures now before us.

First of all we have "Lytham Monarch," a famous flyer, which has won for its owners 1st, Nantes, in the Lytham H.S.; 2nd, North-West Lancashire Federation, and 24th Lancashire Combine, in a fly of 8,500 birds last year.



Some Famous Flyers.

A few Racing Pigeons that have made their mark.

Next is "Lytham Bravo," which won 1st and R.P. Cup from Gloucester in last year's young bird race of the North-West Lancashire Federation, 3,417 birds competing, velocity 1,093; 1st and special, Lytham H.S., and 1st, West Coast Flying Club. Then we give a photo of the bird which won 1st and R.P. Cup at the 1904 Dairy Show, for birds flown 100 miles. We also give the winner of the 1st prize at the 1904 Dairy Show in the class for "likeliest bird for flying purposes." In addition, and by no means last and least, we give an excellent photograph of "Her Majesty," which is claimed to have the longest distance champion record of Great Britain, having flown 854 miles; and of "Lytham Wonder," a dark blue chequer with a marvellous record.

A Wonderful Flyer.

When one year old this pigeon flew from Bordeaux to Lytham, a distance of 622 miles, in the National Flying Club race, and it holds the record for the longest distance flown into England by a yearling bird. She has, besides, many other good records, which space will not permit me to give here.

The progress of the sport in these islands has been phenomenal. From what was purely local flying, the pigeon-racing of Great Britain has developed into a national sport, and flies from the Continent are now the order of the day. In 1889 it was thought very bold of the Lancashire Flying Club to arrange for Rennes, La Rochelle and Bordeaux races, distances of 370, 510 and 610 miles respectively, but such things are by no means unusual in these days. Until 1889, the longest distance covered into Lancashire had been from La Rochelle, and into Yorkshire 540 miles from the same place. It was a bird belonging to Mr. C. Mills which did this fly. The liberation took place at 5.14 a.m. on July 22nd, 1889, and Mr. Mills's bird was reported home on August 1st. The Lancashire F.C. birds were liberated at Bordeaux on August 6th at 5 a.m. and the first pigeon, belonging to Mr. Jesse Farr, of Rochdale, arrived on the 15th, having

covered 613 miles. This valiant bird was five years old, and it returned to its loft shot in the wing and the body.

Difficulties to Overcome.

In order that my readers may understand some of the conditions of pigeon-racing, and the difficulties to be overcome, I now give an extract from a letter from Mr. J. W. Logan to the "Homing News," written in 1889:—"My idea," he says, "is that the chief reason for the enormous losses in the races from France is that the baskets are filled with a large proportion of

young, inexperienced birds; and I cannot help thinking that before better average results are obtained, our fanciers must clearly understand that unless blown home by a tail wind, not one inexperienced bird of every 25 sent is capable of doing 400 miles in one day, and that to get the best results, men must have patience and train their birds gradually, and also send them to the post fresh, fit and keen, and not jaded and weary. If good fortune dropped me down amongst the keen, good fanciers of the north, and I had to start a loft, I should, with a firm belief in the magic of patience, do it on the following lines:—In their first year, as squeakers, I should fly my birds 50 miles; second year, as one-year-olds, 100



Blue Chequer Flying Homer.
(1st and Cup, Dairy Show, 1904.)

miles; third year, as two-year-olds, 200 miles; fourth year, as three-year-olds, 300 miles; fifth year, when the birds were four years old, I should be ready for the advocates of the flying of young birds to any distance they liked. In addition, I should mercilessly draft all birds that allowed themselves to be continually beaten, so as to enable me to enter for the races with reliable birds only."

The advice from England's greatest Racing-Pigeon man—for to this title Mr. Logan is entitled—is indeed valuable. In 1886 he and his brother sent ten birds to La Rochelle. They had four home the same day, and five more before breakfast the next morning. This is a marvellous record.

The Speed of the Homer.

The speed of the Homing Pigeon is a most interesting study. I could give numerous instances of enormous speeds, but must be contented with a few. On June 24th, 1888, at Perigeaux, a concours organised by the fanciers of Paris, the rate of speed per minute of the first ten pigeons was 1,202 yards, and on the 30th September of the same year, in rainy weather, the fly from Lille to Paris was at the rate of 1,378 yards per minute. When you carefully study these speeds, and remember that they approximate the speed of an express train, also considering the great amount of air-resistance and the prevalence of high winds in wrong directions, you will see how remarkably fast the little bird is.

The Wind as a Factor.

The wind has enormous power, and affects racing pigeons very considerably. The normal speed of a Homer during calm weather and for minor distances is about 1,200 yards a minute, whereas with a breeze favourable to the bird,

they may attain a speed of over 1,500 yards. If the wind becomes strong and rises into a storm, at the same time blowing in the right direction, the speed may be 2,000 yards. On the contrary, we find that a bird flying against the wind will attain a velocity of only 900, and the higher the wind in the wrong quarter, naturally the lower the rate of speed.

I could go on writing on this, my pet subject, for a very long time, but the Editor's warning has to be obeyed, and if I have, by these few lines, engendered any interest in the matter, then I have performed my mission, and I may have an opportunity later on of enlarging on the Racing Pigeon for the benefit of interested readers.

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The Dipper, or Water-Ouzel.

Sugar-birds.

By MISS DYDDGU HAMILTON.

Three centuries ago, it was universally believed that somewhere in the far interior of northern South America lay the golden land called El Dorado, with its fairy city of Manoa, all gleaming with gold and precious stones.

Sir Walter Raleigh and many travellers and adventurers after him started in search of this new country of fabulous wealth and monstrous inhabitants; nor was it until the beginning of the 18th century that Humboldt finally dispelled the mythical beliefs concerning this rich country far away in the direction of the setting sun.

Yet even now a veil of enchantment hangs over the immense stretch of impenetrable forest, and over the grand and fantastically-shaped mountains of the region where Sugar-birds are found, and our knowledge of a great part of their native land is still shadowy and indefinite.

The Home of the Sugar-birds.

It is a region rich in bird and insect and vegetable life, difficult of access and deadly in climate, a region of abundant rains and rapid rivers. It is but thinly peopled by small tribes of Indians, who are invincibly disinclined to undertake long and arduous journeys of exploration, and therefore this most interesting country still remains the least known part of the tropics.

The family of *Cærebidæ*, or American Creepers, to which the Sugar-birds belong, is divided into eleven genera, containing 75 species. Their range extends from South Mexico on the north to the Gulf of Guayaquil on the western coast of South America; and to the southern limits of the wood region of South-East Brazil, and the Amazonian valley, on the eastern side of the Andes. Fifteen species are peculiar to certain of the Antilles, several of them to one island only, and *Cæreba flaveola*, the Banana Quit, the type of the typical genus of the family, is found nowhere but in Jamaica.

Family Features.

All the members of the family are called Honeycreepers, or Quit-quits, and are small, brilliantly-coloured birds nearly allied to the Tanagers. The male is always distinguishable by his plumage from the female, who, after the usual manner of bird-kind, is less showily dressed than her mate. The colours are mostly brilliant yellow, blue or green, combined with lustrous black in the wings and tail.

In their wild state these birds feed upon small insects, ripe fruit, and honey. They also frequent curing-houses where sugar is kept, being attracted thither by the abounding swarms of flies and ants.

Sugar-birds build their domed nests in low trees or bushes where wasps have constructed their paper habitations, and it is said that the

birds' object is to secure a position rendered safe from intruders by the presence of these formidable insects, with whom a "league of amity" is established. But considering the greedy way in which the little Sugar-birds devour wasp grub, I have my doubts as to the league of amity!

The Purple Sugar-bird.

A good idea of the exceeding grace and beauty of the Sugar-birds can be obtained by a visit to the Insect House of the Zoological Gardens. There, in a large glass case about 6 feet long, can be seen three different species, representing two sub-families of these lovely little birds.

The most interesting, perhaps, is the Purple Sugar-bird, *Cæreba cærulea*, from Caraccas; partly because it has been less often seen in England than the Yellow-winged or than the Blue Sugar-birds, but especially because of the Purple bird the Zoological Society has a pair, showing the great difference in plumage between the male and female. This difference, however, does not always exist. The cock bird is now a beautiful purple-blue, much the same glorious colour as that of the large bell gentian (*Gentiana acaulis*) so common in the Alps; but when I first saw the birds early in March the cock was all spotted and speckled with green on back and breast, so that at that time I thought how much more appropriate was the French name for the bird, "Grimpereau vert tacheté" (Spotted Green Creeper), than our English name of Purple-sugar bird. But to anyone seeing the bird as he now is in full dress the French name would appear quite meaningless.

In the adult male of *Cæreba cærulea* the beak is long, curved, and polished black. The eyes are black. The legs and feet are bright yellowish green, with black nails. Above and below the feathers are a beautiful purple-blue; the lores, throat, wings and tail are a velvety black. The whole length of the bird is about three-and-a-half inches.

The adult female is dark-green above; lores rufous; below she is pale yellowish with dark green striations. Her throat is rufous, and her green legs and feet exactly match her plumage.

If this bird be compared with the lovely little spotted Emerald Tanager, *Calliste guttata*, which is in a cage in the Insect House, the very strong likeness between the Sugar-birds and Tanagers will be readily recognised.

The Yellow-winged Sugar-bird.

Even more exquisitely beautiful is *Cæreba cyanea*, the Sai or Yellow-winged Sugar-bird, of which the Zoological Society has one male specimen. Its eyes and beak are shining black; its legs and feet coral-red, with black nails. The



Blue Sugar-birds.

(See accompanying article by Miss Dyddgu Hamilton.)

crown of its head is bright turquoise-blue. The inner webs of the secondaries (except the terminal portion), part of the inner webs of the primaries, and part of the under wing-coverts are canary-yellow; the rest of the wings, the tail, the lores, orbits, hind-neck and back are deep black; all the rest of the plumage is a uniform deep sky-blue.

The hen of this species is plain dull green above, and pale olive-green below; the wings are partly yellow, as in the male.

The cock bird has a pretty warbling song, and his flight is so rapid, and when hovering on his wings he vibrates them so quickly, that it is almost impossible to perceive the bright daffodil yellow colour from which he derives his name.

A lady member of the Avicultural Society procured one of these birds in Jamaica, and brought it alive to England. She describes it as very active, steady and tame. She fed it on bananas, wasp grubs, green caterpillars, ants' eggs and mealworms; but it was not keen on the mealworms, and would not touch egg nor any farinaceous food.

The Blue Sugar-bird.

Dacnis cayana, the Blue Sugar-bird, of which there are now two male specimens in the Zoological Gardens, has been more often kept in England than either of the other two. It has black eyes and beak, reddish-brown legs and feet, lores, throat, back, flights and tail black;

all the rest of the bird bright blue, of much the same shade as the Indigo Bunting.

Mr. Fulljames, Mr. Fillmer and Miss C. A. Hodgson have all successfully kept this bird. It appears to thrive upon a diet of bananas, sponge cake, yolk of egg, and a good insectivorous food. It is also fond of honey, and would no doubt eat small insects readily.

The Zoo Treatment.

At the Zoo all the Sugar-birds are fed upon soft food mixture, grapes, oranges, bananas, and a delicious-tasting mixture of syrup and meat juice. I have watched the Purple Sugar-bird feeding upon this, and he sucks it up in long draughts, without raising his head to "say grace," as so many birds do when they drink.

The Sugar-birds have been now for some months in the Zoo, and certainly no birds could look better or happier than they do. Although they appear such fragile jewels, they are probably no more difficult to keep than our own small insectivorous birds, and while I would not recommend a beginner to spend his money on either, yet to those who have had experience the keeping of the Sugar-birds should offer no insurmountable difficulties.

If kept in a good-sized box cage in a warm, well-ventilated room, and carefully fed as recommended above, they should do well and live long, things of beauty to delight the eyes of all beholders, and a joy for ever to their fortunate owners.



**Some Juvenile Efforts at
Drawing Canaries.**

By the MASTERS TYSON (London, S.W.)

The Woodcock.

(*Scolopax rusticola*).

By JOHN FLEWELLING.

Needless to say, a special interest attaches to migratory birds.

The naturalist's and a plurality of pens have from time to time placed before the reader their description, haunts, habits, and so on, so that to supplement is to some extent to bore—at least certain people. Others, and they are not the few, still find ever a fresh welcome for a page devoted to this charming class of feathered ones.

Chief of His Clan.

A real game-looking bird is the Woodcock; "don" of his family.

Shy in the extreme, and wonderfully adroit is he; twisting, diving, and dipping in and out of the network of twigs, clear of them all, and ultimately vanishing, a mere streak of grey and brown. On another view one perceives him, when startled or frightened, squatting down as closely as a cowed rabbit.

The bird is a pretty creature, with his rich pencilling, fawn or light-brown, drab or smoke-grey, with over shades of a darker hue. He potters about in the dead leaves of the monarch oak and its neighbours, and flicks his tail up, an innocent invitation to the fowling-piece.

Protective Colouring

When quiet, huddled up under the branches of evergreen, the Woodcock's plumage so harmonises with the tones of its resting place, one might almost pass it unnoticed in the withered and tinted leaves, but the handsome and moist owly eye of the bird (master of the gloaming light) betrays its whereabouts.

Large numbers breed in the United Kingdom every year, but the vast body come from foreign shores, to return thither. Some of course, however, do not escape capture.

Hawked, netted, and otherwise taken, these plump, prim, and erect-looking creatures were extensively thinned of yore

A Lover of Home.

Unlike the Snipe, distributed all over the country where morasses, bogs, and suitable districts are, the Woodcock cherishes his own particular locality.

When not molested by the tripper, he loves to shoot through a glade or favourite track from the hills to feeding-places on the moors or moist grounds below.

In Scotland and Ireland both Snipe and Woodcock are especially plentiful. These are both great breeding and assembling places for this ilk. Large numbers congregate in the marshes and bogs of the southern counties of England, and in coverts on the Surrey hills; at New St. Leonards, also, many may be come across, vary-

ing in markings and depth of colour, likewise in size.

Birthplace, food and climate, these all play part in the plumage and size of the migrant.

Feeding and Family Habits.

The southern counties Woodcock are credited with early breeding. A case is recorded of a female bird being seen running about with her brood in and out some half-melted patches of snow on a moor border near the forest. In very severe weather Snipe and Woodcock may be seen feeding with the shore-fowl, whatever may be conformable to fact in regard to this in general.

This long-billed friend is largely a feeder at night, and when the weather is dull. On clear nights he will be most successful. In secluded localities on some of our coasts mothers and chicks feed by day.

Woodcocks paddle occasionally, and, what is now a recognised fact, carry their young to and from the nest to the moorland feeding grounds.

The female alone is credited with this "Pick-a-back," but some believe the cock also has a claim.

The chick is very tiny—avoidupois necessarily ditto.

Weight of Woodcocks.

Remarkable is the difference in weight of mature Woodcock; a well-fed specimen may scale 10, 11, 12 ozs., others as high as 14 or 15, and here and there a bird even 22 ozs. Some go not much over 8 ozs.

Both Snipe and Woodcock feed much alike; worms of all sorts form their menu. Extinct is now the old living-by-suction belief, when curious and strong prejudices existed with many in regard to this bird's being a suitable candidate for the dish. As a matter of fact, served up on toast he is what may be described as a dainty morsel.

At one time this was a bird little known to the general public—more heard about than seen. An old-time sportsman's bagging a single cock or a brace in our marshlands was looked upon as a feat.

A Wonderful Traveller.

Examining closely the Woodcock's lovely wings one wonders at the perfection of anatomical construction.

The covering of marvellously long distances—to us—is a matter of small moment to these visitors or other birds of passage. When migrating in the air, far above the human sight, what must their speed be?

Woodcocks have been successfully kept in confinement.

Little Bird Friends.

A HISTORY RELATED BY MISS H. B. RUTT FOR YOUNG BIRD LOVERS

(Continued from p. 56.)

CHAPTER III.

DAVID, THE GREEN SINGING FINCH.

This is a very elegant, graceful bird about the size of a Redpoll. His back, wings and tail are olive-green, his breast and part of his head a lovely gamboge-yellow. I daresay you know what gamboge is, as it is found in most paint-boxes. The top of his head is a pale lavender colour. He has yellow eyebrows, and a narrow stripe of black both sides of his face, giving the effect of a long moustache.

A Sweet Songster.

He is a beautiful singer, so you can guess why I named him David—after King David, who, as you know, wrote most of the Psalms, and sang them, playing upon the harp. For this reason he is sometimes called the sweet singer of Israel, and my David is certainly the sweet singer of Château Chez-les-Oiseaux. He sings all the year except for the few weeks that he is moulting. His is a clear rich voice, with a very joyous ring in it. It puts me often in mind of a Robin, and yet more often of a Song-thrush, although of course it is not so powerful as the song of this large bird.

Sacrificed Music.

What a great deal of pleasure we should lose if we had no singing-birds. We are so accustomed to it here in England, that we can scarcely realise what a sweet spring morning or evening would be without their song. In Italy, some few years ago, nearly all small birds were shot indiscriminately for food, and one saw bunches of Goldfinches, Linnets, etc., hanging in the poulterers' shops. Here in England we are not guiltless in this matter, as the bunches of dead Skylarks offered for sale show. But the national feeling is to a great extent against it. In Italy, at the time of which I am speaking, one could saunter amidst the most lovely scenery and scarcely hear a bird's voice. All hushed for the sake of a dainty dish! I would much rather eat cold mutton than a dainty dish made of pretty singing-birds, wouldn't you?

One of Nature's Gentlemen.

I think there is a difference in rank among birds, the same as there is among ourselves. Though all mine (with one exception, of whom you will read presently) are well bred and have good manners, yet David is superior to all, and I should think moved in the highest bird society in his native land. Indeed, I am inclined to think that he may be of royal blood. He is invariably courteous. Of course, like the rest of the world, he is sometimes a little put out, or wakes up cross in the morning, in a nasty

temper. Our old nurse used to call it "getting out of bed the wrong side." But even so, he never seems to forget his dignity or high breeding. Instead of scolding or saying rude, rough things to any other bird that annoys him, he just opens his beak wide and stares. This seems to answer quite as well, and is quieter and more dignified than quarrelling.

All my birds live chiefly upon various kinds of seeds, but David's favourite little dainty is a piece of stale sponge-cake.

At Home in the Tropics.

The Green Singing Finches come from the south-eastern coast of Africa, and from the large island of Madagascar, separated from the mainland by the channel called the Mozambique. The climate is very unhealthy there, and few English people can stand it. It is within the tropics, south of the equator, and is intensely hot. It is also extremely damp, and it is this that makes the heat so trying. Madagascar is more than twice as long from north to south as Great Britain. In the centre rise some mountains 10,000 feet high, but even at this height, where in Switzerland there would be perpetual ice and snow, ice is only occasionally seen. The greater part of the island is low and swampy. The natives are dark and are not a happy race. I do not feel much inclined to "imagine" about David's birthplace, for I am sure I should not care to visit it, and I do not think you would either. The French name for the Green Singing Finch is *Chanteur de Mozambique*.

(To be continued.)



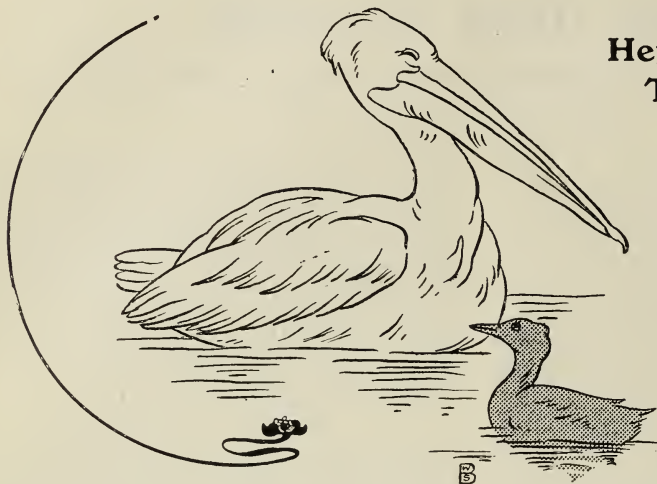
Photo copyright by

[W. S. Berridge, F.Z.S.]

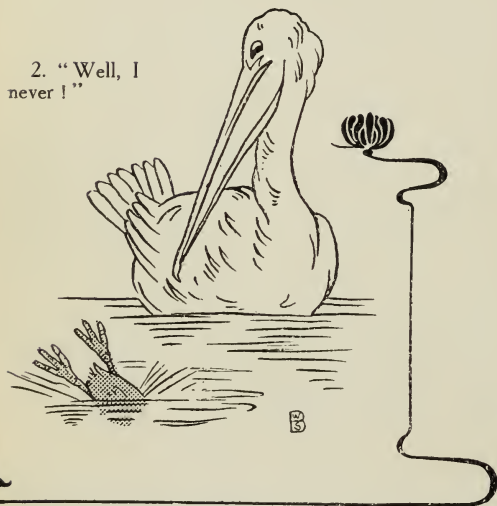
Australian Night-Heron.

Hey Diddle Diddle; or, The Dabchick and the Pelican.

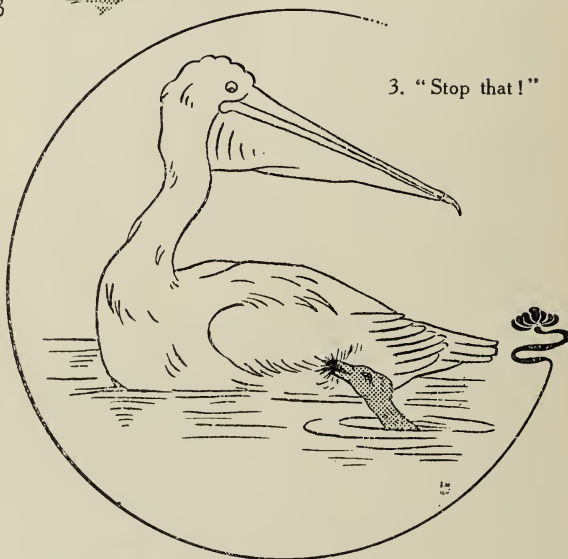
1. "Good morning, Mr. Pelican,"
said the Dabchick; "have you seen
me dive?"



2. "Well, I
never!"



3. "Stop that!"



4. "Got you this time, you
imp!"



5. "I don't think so," said the Dabchick.



GREEN CANARIES

($\frac{3}{4}$ -size of Original.)

The Heron.



Photo taken from a Heron set up by Alfred Thomas (Gloucester).

Some Popular Favourites in Courting Poses.



Cock Robin.



The Skylark.

Chirps and Chatter.

THE HOOPOE.

Most of my readers will have no difficulty in recognising the quaint crowned head of the Hoopoe on the cover of this month's *Bird World*, for the species is well-known from stuffed specimens, even if few people have seen it wild. When seen on the wing for the first time, the Hoopoe is, indeed, not likely to be recognised by everybody, for the crest then lies down quite flat, and is not noticeable. The flight is very pretty and peculiar, the broad barred wings being alternately flapped strongly and closed, so that the bird looks like a great black-and-white butterfly. The Hoopoe is a great traveller, being a summer migrant here, and often occurring in out-of-the-way places. It visits us regularly, and has bred where unmolested, but it almost always gets shot on sight. Perhaps the readers of the *Bird World* may be able to do something to protect it, if a specimen comes their way this year.

AN EXCELLENT PET.

A living specimen may be seen in the Insect House at the Zoo. It is hand-reared and very tame, as such Hoopoes usually are, for the bird makes one of the best of pets, although, as it is purely insectivorous, its food gives some trouble. A mixture of chopped raw meat and hard-boiled egg, with stale bread crumbs, ants' eggs, and dried flies, should form the staple, and meal-worms and other insects, besides earth-worms, be given as well. The birds should be kept warm in winter, and have plenty of sand, as they like dusting themselves; they do not bathe, or even drink, but it is as well to give them the chance. A pan of earth, or a turf, in which they can probe and dig for the live part of their food, is important for their comfort. One prominent aviculturist has even kept Hoopoes in the open, hand-reared, of course, and found they remained tame and kept about the place. Thus this beautiful and harmless bird could easily be artificially encouraged; our London parks would be a good place for the experiment.

A WILY SPARROW.

In a recent issue of *Country Life*, Mr. F. Hookham relates a piece of very extraordinary behaviour on the part of a Sparrow. He found a puppy playing with it in the road, and it appeared to be dead when he got up to it; but, on turning it over with his umbrella, he was astonished to see it get up and fly strongly away. His conclusion that the bird was feigning death to escape the dog's attentions seems reasonable; this, however, would be a new trick for the Sparrow, though one not unknown to the Corncrake.

SYMPATHETIC CANARIES.

We know a lady whose four Canaries enter into all her tasks and pleasures and doings. They eat and drink when she begins, but not before—as soon as the covers have been withdrawn from the dishes. They understand her words and obey her wishes. When the time arrives for family prayers, and she tells them to stop singing, they stop at once. In company they sing, if requested, or are silent. When told to look out of the window, they look out. The various vicissitudes of this lady's occupations they follow with keen interest and intelligence. When her husband died, they recognised the sad

truth of her bereavement, and mourned and moped for weeks and refused to be comforted, for they were almost as greatly attached to him as to her. When she is depressed they know the fact and offer mute sympathy, and when she rejoices, they reflect her brightness with their own. Long and tender and intimate association has united them all in the most beautiful way. They say good-morning and good-night, just like loving children.—F. W. Orde Ward, in the "*Animal World*" for February.

A PATERNAL PHEASANT.

In the *Illustrated Sporting and Dramatic News* for February 2nd, Mr. F. W. Millard gives an interesting account of a cock Pheasant which was observed to take to sitting in Staynor Wood, near Selby. He sat out the full time, and hatched off the chicks, but the subsequent fate of the brood was not ascertained. Cock pheasants have, however, says Mr. Millard, been known successfully to rear broods, which they have thus hatched themselves; he adds that birds with this paternal turn of mind are nearly always old ones. The account is illustrated by an excellent photo, showing the bird on his nest. The case is an interesting one, in connection with the theory that the typical Pheasants are naturally monogamous birds, and only become polygamous when the opportunity is afforded by the shooting of so many of the males.

THE LAW OF SEPARATION.

With regard to the question why species which can produce fertile hybrids do not get mixed up in the wild state when occurring in the same country, the answer would seem to be that really distinct species—differing in other points besides colour—have an instinctive reluctance to pair, as all mule-breeders know. In the case of the Amherst and Gold Pheasants, these two birds, although both Chinese, are not usually fond of the same ground, the Amherst being a bird of higher elevations than the golden, which species it drives off when this ventures to trespass on its mountain haunts.

PIGEONS FOR THE PARKS.

Mr. Seth-Smith's idea of liberating foreign pigeons—especially the Crested Dove of Australia—in our parks has of late, I am glad to say, been meeting with practical support from aviculturists, who have contributed both specimens and money. A good collection of the birds is now housed in the Western Aviary at the Zoo; they are chiefly Crested Doves, but Common Bronzewings, Half-collared Turtles, and the ordinary domestic Barbary Dove are also represented. Many people must have examples of the last-named bird to spare, and may perhaps feel inclined to contribute them in aid of this interesting experiment. Barbary Doves have been at large in St. James's Park for years, and have done well and bred regularly. An attempt made some fifteen years ago, however, to introduce the Half-collared Turtle there ended in disappointment, as the birds disappeared after staying for a few months.

A PIGMY OWL.

There recently lived for a short time at the Zoo one of the most interesting of Continental birds—the Passerine Owl (*Glaucidium passerinum*). This species has been very rarely imported, and has often been confused with the Little Owl (*Athene*



Hoopoe on the Wing.

It will be noticed that the crest is not at all noticeable in flight, the most striking peculiarity of the flying bird being its broad black-and-white wings.

noctua), now a British bird, as I remarked last month. The Passerine Owl, however, has never been seen wild in England; it inhabits Northern Europe and Siberia, and is not a well-known bird like the Little Owl. Both are small Owls, brown-and-white in colour, and compact in shape, with pale-coloured eyes and plain heads—devoid of ear-tufts. But though the Little Owl is a small bird as owls go, it is much bigger than the Passerine, being as large as a Blackbird at least, whereas the other species but little exceeds a Sparrow in size. Surely these small species of Owls ought to be admitted to the show bench; they would awaken much interest, and are more suited for caging than many species often shown. The three small European species alone—Scops, Little, and Passerine—would make up a very interesting class, and the South-American Burrowing Owl could go with them.

REPRODUCED BEAKS.

A very curious case was reported recently in *Cage Birds*, in which whole stocks of Canaries, belonging to more than one fancier, became affected with a disease, which caused the upper bill to rot away, the lower jaw remaining intact. It appeared in the two bird-rooms affected under circumstances

which precluded the possibility of contagion, and was for some time an absolute puzzle. Later on it was shown that the two sets of birds had been washed with the same soap, and it is suggested that this, entering at the nostrils, had caused the strange decay of the upper bill. It was stated that the beaks of the birds affected were beginning to grow again—a very strange fact, for, as most of my readers know, the bill of birds is a bony structure, merely sheathed with horn, and in vertebrates so highly organised as they, bony parts are seldom reproduced when lost.

THE DANGER OF GRIT.

Mr. G. E. Weston recently struck a timely note of warning in respect to the danger of giving grit indiscriminately to newly-imported Siberian Goldfinches, which had been long without it. I have heard that Gouldian Finches are also peculiarly susceptible to injury from this cause, and have seen a case in which three hybrids between the Guinea-Fowl and common Fowl—big, robust-looking birds—died off very rapidly when freely supplied with grit after long abstinence from it. A post-mortem showed their insides fairly packed with the grit, and there could be no doubt that this had been the cause of death.

The Hawfinch.



In spite of his heavy build, the Hawfinch is a noble-looking bird, and is as much admired by fanciers as he is disliked by the gardener, who does not approve of his attentions to the peas.

Impressions of the Palace Show.

By FRANK FINN, B.A., F.Z.S.

The great Avicultural Exhibition at Sydenham, an event always so eagerly looked forward to, still sustains its interest, and large and merry was the gathering that thronged the show enclosure on Saturday afternoon as I strolled round to gather impressions. Canaries were in great force and form, and the loud voices of the British exhibition birds filled the room, contrasting vividly with the suppressed—I almost fancied depressed—and long-drawn trilling of their German rivals in the small concert-room set apart for their use. Charming as is the ordinary German, there is something about the trained professional which rather reminds one of the musical-box.

The mules or hybrids made a very fine show in themselves; it was pleasant to see the beautiful Goldie-Bullie hybrid well represented again, to say nothing of the Canary-Bullie, voted "impossible" not so very long ago. A bird which purported to be a Redpoll-Greenfinch caused a good deal of comment, as it did not show any trace of either of these species, but looked as if the Brambling and Chaffinch were accountable for its origin.

FREAKS IN FEATHER.

The rare-feathered class contained some truly interesting birds, notably the first prize winner, a lovely white Bullfinch, which well deserved his position. A great peculiarity of this bird was that it showed a delicate pink colour, not only on the breast, where this might have been expected, but also on the crown, where it was certainly rather unaccountable; the effect, however, was singularly pretty. A beautiful Goldfinch shown in this class was one in which the nut-brown parts of the normal bird's plumage were replaced by a pale ashy-grey shade, giving a very charming effect, as the rest of the plumage was normal. This is surely a very rare variation; but one prominent British bird fancier present told me he had had three similar ones this season, so there must be more about. A cinnamon Hedge-Sparrow was also a remarkable exhibit.

MEADOW BUNTINGS TO THE FORE.

There seems to have been a very strong migration (?) of Meadow-Buntings here of late, since no less than five were shown in the "British" class! Among the softbills some very good Nightingales and Blackcaps were noticeable; one of the former did his best to oblige with a song, but his efforts, though well-meant, must have been disappointing to people who looked to him for their first idea of the famous songster, for he seemed to be a hand-reared bird, with no knowledge of the

characteristic and beautiful notes of his species. One of the Blackcaps was shown in a cage which was a triumph of avicultural upholstery, being lined with green plush, the perches covered with the same; it certainly had a good effect, and showed up the bird well.

A DEARTH OF RARITIES.

There was not a very remarkable show of the more out-of-the-way British birds; no Woodpeckers, though some nice Nuthatches and Tree-Creepers were shown; no common Wrens, though there were a lovely Gold-crest and three Bearded Tits, including a fine three-year-old hand-reared specimen. A Great Grey Shrike was, however, a very noticeable exhibit, and well deserved the first he got.

Among the Foreign Bullfinches one Russian is credited with being a "beautiful piper"; an interesting note, because these big fellows are said generally to lack musical ability. The British classes no doubt suffered a good deal in interest by the absence of many of Mr. Maxwell's birds, which would presumably have made their appearance had it not been for their recent sad fate in the lamentable fire on that gentleman's premises. His beautiful Magpie, one of the few survivors, did, however, turn up, and got a third.

A SLACK SECTION.

The Foreign Bird Classes were somewhat deficient in interest. The foreign bird fancy is, it seems to me, only half alive; for one thing, exhibitors have in many cases very little idea how to stage their birds. The cages are in too many cases a very scratch lot; often a bird was shown in what was apparently its living-cage, at any rate, an absurdly large one to send it to a show in, involving much unnecessary expense. Then, far too many of the cages are open, and some birds were sent in in a condition that one would have thought anyone would know precluded them from any chance of winning. How a common bird can be well sent out was shown in the case of a fine Pekin Robin, a well-known winner, of large size and rich colour—he presumably owed some of this to colour-feed, as the bronze tinge of his head showed—which was so steady that he freely sang when the call-note of the species was whistled to him. Classes for common birds like this, Budgerigars, Javas, etc., are what are needed to keep up the foreign bird fancy. There were some good varieties on view, however; notably a fine male of the black Baklan Cockatoo, besides a female of the species, which sex has been more familiar of late.

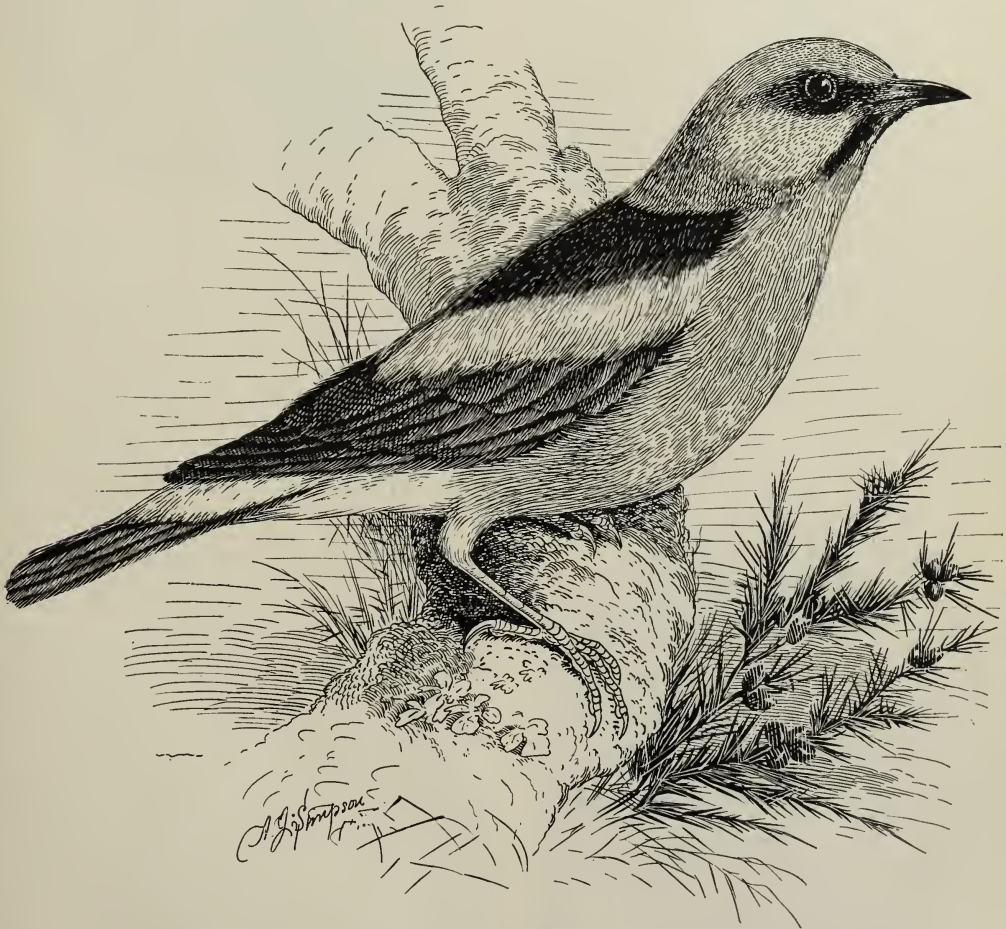
SOME RARE FOREIGNERS.

A pair of the rare Rufous-backed Mannikins, new to the show bench, were shown, and certainly should not have had to put up with a V.H.C. The Japanese Tits were also, I heard, new to shows, but a good many have been over long ago. The well-known Copper-head or Black-backed Tanager was on view in good form, but had to go below a beautiful Yellow-winged Sugar-bird, a species not so often seen as it ought to be, considering it is not a delicate bird. Specimens of the Hill-Mynah and the Ceylon form of the House-Mynah were on view, both talkers, it was said; the former, at any rate, frequently obliged bystanders with remarks, and caused much amusement.

FOREIGN HYBRIDS.

The foreign hybrid class had seven entries, though one bird evidently got in by mistake; it was supposed to be a Zebra-Finch—Indian Silver-bill hybrid—but was most unmistakably merely a cock Combassou. The Red-mantled Parrakeet was particularly interesting, as being the only specimen of this Rosella-Pennant cross known to have been taken in the wild state, and well deserved its premier position.

On the whole, interesting as the show was, it gave one the impression that the British, and still more the foreign, section, have a lot to do before they can come up with the perennial Canary.



The Black-backed Tanager.

A well-known Winner, belonging to Mr. S. M. Townsend.

This Tanager is remarkable for its graceful shape and has very beautiful colouring, the head being copper-coloured, the shoulders pale yellow, and the under-surface sea green, all with a wonderful gloss.

The Elegance and Horror of Bird Parasites.

Written and Illustrated by JAMES SCOTT.

Parasitism is so universal, important, and withal abhorrent a phenomenon that it becomes matter for wonder, upon due reflection, *why* its practice was instituted and has been maintained so steadfastly, in defiance of the evils attributable to it, and the persistent efforts at defence by the victims and their protectors. While the general law which underlies the advantageous progress of life is the survival of the fittest—a theme beginning to show signs of wear and tear, yet one of the most valuable to all who deal with any phase of nature—the converse appears to be the case in regard in pestiferous parasites, whose degraded condition and mode of life seem to imply that in their own case, at any rate, retrogression is desirable in preference to progression. This view of the subject suggests the existence of a completely paradoxical state; yet, as I will set forth shortly, parasites are creatures which have come down in the world's struggle, and apparently increase to a greater beneficial extent because of that very suppression of ability and form.

Right away from spiritual man to the lowest of the insects every grade of life is exposed to the attacks of innumerable parasites, which exist at the expense of their victims' health and comfort. Even the familiar house-fly is worried by a parasitic mite, whose power of resistance to dislodgement is surprisingly effective. Indeed, nearly every species of beast, bird, fish and insect possesses a characteristic kind of parasite often entirely differing in constitution from its contemporaries. Notwithstanding this fact, however, I suppose that on this occasion I must not allow my remarks to wander off into the byways of my topic, but confine myself to the birds.



The metamorphosis of the hen's flea, from a tiny maggot, magnified.

There are, in a rough way of speaking, four distinct groups of insect parasites affecting birds. The largest are two-winged flies; the next in size are the fleas; then come the lice; to be followed by the minute mites. The first-mentioned are much scarcer than the others, but notoriously troublesome if they gain a footing. They generally puncture and lick their victims. The second group resemble in general formation, bulk, and habits the fleas which infest mankind; yet, contrary to popular supposition, are quite distinct from the latter, though the variations are such that they are only recognisable to trained entomologists. The third group occasion, perhaps, the most actual pain to their hosts, and may be regarded as the ugliest of all the undesirable pests. They are possessed of sharp biting jaws, and thus nip the flesh instead of simply piercing it as do the others. The mites are skin borers; but are not considered to be true insects, a point which need not now trouble us.

In this survey of the subject I am giving a very representative member from each of these three groups, omitting further reference to the fourth because I have already dealt with the red-mite in "Cage Birds." There is a peculiar fact, not known to those who do not study entomology, in relation to the structure of such insects as house-bugs and fleas. These are, beyond dispute, descendants of ancestors which had fully formed wings, and, even now, all these repellent creatures have traces upon the sides of their bodies signifying proof positive of the assertion. We can best understand how this abnormality has



The Blackbird's Parasite, enlarged. In the small circle is shown one of the four-pronged and feathered claws, much magnified.



Pigeon Louse, magnified—actual size about one-tenth of an inch; In the side circles are shown the remarkable "thumb and finger" claws on a much larger scale

evidenced itself by considering the parasitic fly of the Blackbird, which I have pictured.

Although this identical specimen is procurable from the bird named, companions of rather different shape and dimensions infest large numbers of other kinds of birds. As can be seen, this parasite is winged in a liberal manner. Now here is a startling truth: *that very same insect, but without wings, is parasitic on a quadruped.* This rule applies through the whole run of their histories. As an example, the winged parasite-fly of the grouse is found wingless in the stag. There must be a very cogent reason for this direct connection in the habits of attacking both birds and beasts in rotation, and only systematic study carried out persistently and with enthusiasm could arrive at the full degree of truth.

The phenomena, however, enable us to adequately realise the method of introduction of parasites, and their gradual degradation to horrible creeping things. Here we have a fly which has acquired the habit of attacking birds. Its wings permit it to seize upon a victim while it, too, is flying, or during a time when it may be normally out of easy reach. But when the same creatures attack animals of the field, and can thus pass from one to another because of the frequent contacts among the latter, or by crawling about the ground and up their legs, the wings fall off as unnecessary adjuncts. Imagine that the deformed parasites confined themselves exclusively to beasts, and you will see that in course of time their own offspring would reveal merely rudiments of wings; which is exactly the case with bugs and fleas, though other modifications are noticeable besides. Of course, we can only speak in a general sense, and not dogmatically with excessive assurance.

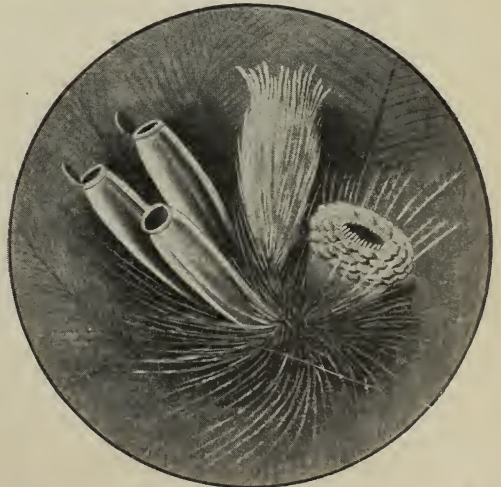
As birds are very active beings, their frequent



Flower-like fluff-enclosed eggs of the Peacock's Parasite, magnified; the lids have been removed from the eggs.

flight, or agitated ruffling and fluttering of their feathers, would soon displace the parasites which were not specially endowed to resist disturbance; hence we find that the extremity of each of the six legs is furnished with a four-pronged claw, from the middle of which extends a finely-ribbed thread which can entwine round the similar portions of the bird's feather. These parasites pass through the usual transformations of flies; being first a mere maggot, in each case, and then a seed-like chrysalis; but it is worthy of note that the parent produces only one egg at a time, which remains within its body until hatched, when the maggot is released and another one in its turn developed. The dreaded New Forest fly belongs to this group.

Our second foe undergoes an exceedingly re-



Vase-shaped eggs of parasite of Japanese Turkey, generally covered with neatly arranged fluff, highly magnified; the circle may be regarded as an enlarged pinhole.



Patterned pot-like eggs of the Pheasant's Parasite, magnified; each being naturally one-twentieth of an inch long.

markable history. If the nests of hens be shaken over sheets of white paper, there will almost certainly appear some nimble white maggots, wriggling, as though in convulsions, among the *débris*. They are shiny-white, have brown, horny heads, and range in size, according to age, from one-sixth of an inch downwards. These are the forerunners of the hen's fleas, and when they or the latter are detected it must be remembered that they do not attack man; nor do man's fleas interfere with fowls, although their life-histories are similar. When magnified, one of these maggots is shown to greatly resemble a small caterpillar, and this similarity is further accentuated because it will, in ten days or so after its birth from an oval egg, become a helpless chrysalis, like a seed of some kind. The flea itself emerges from the chrysalis at the termination of a further period of one, two, or even three weeks, according to favourable or unfavourable environment. As maggots they do not interfere with the birds, and this dissociation might mislead even the acutest observers. But the fleas themselves are often very troublesome, and even the exercise of per-

petual cleanliness will not keep one's pets free from them if careless neighbours are anywhere in the vicinity.

Our third type is a very common object on Pigeons, and certainly it is hideous enough to almost give one the shudders. Actually biting the poor birds subjected to its influence they cause sufficient torment to lead to death if not restricted by proper treatment. Undoubtedly the extreme result is not a *direct* effect of their assault, but happens through such badly infested birds becoming mopish and languid, which passive condition then renders them easy prey to interior diseases. The Pigeon parasite holds on tight to the fluff of its host by means of a peculiar "thumb-and-finger" joint disposed as claws. These features are clearly explained in the accompanying side circles. In the first the joints are spread apart. When the larger one is closed upon its less movable companion, as shown in the second circle, with an intervening thread of feather, it would require very great force to remove the insect, especially as there are six of these useful pieces of apparatus. The obnoxious lice are at all times of their life of one very little varying form, and do not undergo either transformation or period of quietude.

I have dealt at very great length, I fear, with the hideous side of my subject. This phase has been sufficiently objectionable to deter even many entomologists from pursuing the study of parasitism. Yet with what marvellous revelations such inquiry can furnish us! Many readers will, I am sure, feel ready to doubt the accuracy of my survey, but it is true in every part. Is it not astounding that the most debased—the vilest possible—kind of life can be responsible for the existence of genuine beauty? Nearly all the eggs of parasites, including the bed-bug, and the wretched things which are associated chiefly with tramps and outcasts, differ remarkably from the usual idea of eggs. They are, in point of fact, little pots or vases provided with necks into, or upon, which fit perfect lids. Their variety of shape and detail of ornamentation are equally astonishing; no two kinds being exactly alike, although all follow a general plan of design. Naturally, all these objects are very small; but note what their magnification reveals. I have chosen for illustration three of the prettiest specimens from my collection. In all instances they are firmly glued to the feathers of the bird, as far out of sight as possible.

The eggs of the Pheasant's parasite, though the real length of each is only about one-twentieth of an inch, are neat vases with a surface pattern, which, while it is hexagonal, displays circular points or bosses. Each is capped by a lid-like part, from which extends a "tail"—if I may so describe it.

That the insects themselves do not appreciate the elegance of their own eggs is noticeable from the widespread adoption of a strange practice, which, although concealing one style of beauty, creates another. I give a picture of the eggs of the parasite of the Japanese Turkey. In reality

each is a tiny narrow vase, of iridescent glitter, with a circular lid. Yet when they are found upon the birds they are so compactly and curiously covered in and hidden by fluff and down that they resemble the most grotesque fairy flowers imaginable. The eggs of the parasite belonging to the Peacock are similarly flower-like, though extremely different from other kinds. It must be a unique instinct which implants in these reviled creatures the desire to trim and decorate their eggs in so novel a manner as to imitate minute blossoms; yet I can assure the reader that I have

not exaggerated a single detail. What mysterious motive on nature's part is here discernible? No one can reply with certainty. It seems too improbable that mere chance can cause such commendable symmetry.

In this article I have aimed purely at depicting curiosities. With regard to methods of eradicating, or preventing the appearance of, the parasites I do not deem it advisable to say anything now, though I would gladly do so if the Editor desired me to.



Photo, copyright by

W. S. Berridge, F.Z.S.

The Flock of Flamingoes at the Zoo. These have remained out all the winter.



Chestnut-breasted Finch.

Human and Bird Voices.

Lovers of birds will often study their various voices till they can distinguish with great facility the difference between the notes of blackbird and blackcap, willow wren and wood wren, and other songsters that make the trees musical. But few of them have striven to get into conversation, as it were, with any particular warblers. The most sensitive bird to the sympathy of the human voice is, I think, the piping crow. At one time I had a whole aviary full of these birds for my friends, and I succeeded in imitating them so nearly that they would all set up a concert in response. The most easy of their phrases to imitate with the human voice took the form of an arpeggio—from E flat, the fourth space, to the octave above. This had to be performed faultlessly with the mouth arranged as in whistling, though the whistled notes had no attraction for the birds, neither had any notes with the smallest haze across them. The worst part of the interviews was that when the birds replied they did so with great animation, and appeared very much aggravated to find their visitor unable to proceed with the dialogue. They clustered around with heads twisted waiting for replies, and made you feel much as you do abroad when you have so successfully primed yourself with questions in the foreign lingo that you bring forth voluble replies for which, of course, your conversation book has not prepared you.—S.G., in *The Manchester Courier*.



A trained Sparrow-hawk wearing hood and jesses (the leg straps by which the bird is held).

Spearbill the Heron.

By G. H. LEWIN.

The nest in which Spearbill first saw the peep of day was one of a goodly number built in a row of tall and rugged elms which had stood defying storm and wind on a low hillside for more years than could be told. Stretching out before them for some half a mile or more was a fine old fish-pond, from which the monks of old time had taken many a fish to help them through the hungry times of Lent. In those old days the Herons too often found their way on to the festive board of monastery and hall, when monk and lord kept high revel with any passing guest.

Tradition said that if the Herons left the park the monastery walls would fall and leave the owners desolate; but that evil, as yet, had not been wrought, for the Herons still held their yearly carnival of love-making and rearing a crowd of long-legged, gawky youngsters, who gave promise of keeping the old place safe for generations yet to come.

No monks now walked its ancient halls, for long ago a mighty lord, by some trick of peace or chance of war, had gained it for himself, and it was now, and all the land around, under the sway of children of his name and blood, whose each successive generation heard the same old legend of what should happen did the Herons ever leave their old, old home.

Hérons had lived in the woods even before the monks had come and made the dam which held back the stream and formed the fishpond, for only a mile away to the east all around had once been marsh and fen. Most of this was gone, but a few meres were left, and the rivers and drains and little streams gave up their prey to the long-legged, long-billed fishers who travelled many miles in search of food.

SPEARBILL AS A BABY.

When Spearbill was first hatched he was ugly and small, very unlike the fine bird he afterwards became. He was, however, carefully tended by his parents and grew wonderfully quickly, so that in a few weeks he was long-legged and gawky, and used to stand with his brothers and sisters on the edge of the nest all day long, waiting for the fishes, frogs and various catches his parents brought for food.

The din all around during those long summer days was almost unbearable to anything but the Herons; each youngster in the colony, not satisfied with waiting for its own parents to bring food, must needs set up a chuckling and screeching every time an old Heron appeared in sight, flying steadily with well-filled crop towards the trees, and not stopping its cries until the old bird had fed its own young and was away again.

The parent birds worked hard and fed the

youngsters well, and so, as the summer progressed they began to stretch their growing wings and hop from branch to branch on the tops of the old elms, until they found themselves able to flutter, and at last, with much beating of wings, to fly short distances.

Spearbill had seen several youngsters already open their wings, and, as much by accident as design, go fluttering down to the edge of the pool. One day he was wondering whether he could do it, and was balancing in the wind and spreading his wings, when he loosed his long legs for a moment from the branch he was standing on, and before he could get a hold again a gust of wind had carried him clear, and he found himself flapping to the ground, startled, but quite safe and sound, and somewhat elated with his flight.

HIS EDUCATION.

His parents came to his call and fed him, taking him along the side of the pool to a safer place and trying to get him to fly over to the island in the middle; but although he tried, and found he could fly for a short distance, he did not feel safe to cross the water.

For the next few days he roosted among the bushes in a thicket near the elms, but day after day he found his strength increasing, until he could stretch his wings, and with steady flappings reach his old home again.

One day before he had left the nest the whole Heronry were disturbed and frightened, for in the trees where the Rooks bred not far away there was a great commotion; the old Rooks were sailing high overhead, cawing frantically, and the young ones in the trees kept dropping from the branches as the sharp reports of guns fired by men beneath were heard.

Spearbill had up to that time never seen a man, but the men walked under the trees on which the Herons' nests were, and pointed and talked so much that the old Herons got as frightened as the Rooks. However, they went away and left them all in peace; but Spearbill did not forget, and always afterwards feared any men he saw.

When all his sisters and brothers could fly their parents took them down the stream and taught them how to wade in the shallows and fish for eels and roach, and how to find the frogs and worms and other things of which they make their food. One day his father caught a large water-rat, and showed his children how to kill it by banging it against the ground; they were not particular as to food as long as it was meat, either fish, flesh or fowl; all was devoured by the hungry youngsters to satisfy their growing appetites.



The Haunt of the Heron.

A TERRIFYING ADVENTURE.

One day, after flying far from his old home, Spearbill was quietly fishing in the dusk of evening and forgetting how time flew, and when he called out his long "craigh craigh" there was no reply; his parents had missed him as he fished and had flown away, and he had now grown into a fine bird for a first season youngster, and did not mind being alone, so he quickly sailed away until he found a safe tree where he roosted for the short summer night. He began to love his solitary life, and when he met other Herons he did not stay with them for long, but spent his time in fishing and searching for prey.

One afternoon he was flying along steadily up the main stream of the river, his great arched wings flapping with measured beats, his long legs stretched out behind, with his crop full of fish he had just caught, and expecting to spend some hours resting upon the top of an old withered oak where he could overlook the country far enough to see any approaching enemy. It was his favourite standing place, and he was full and happy, and had no thought of danger, when, as he passed a clump of trees he saw some men, who waved their arms, and almost before Spearbill knew what was afoot two

large Falcons were racing after him. He had seen Hawks before, but only small ones; his instinct, however, told him that now he was in grave danger and he must keep above them if he could.

Almost without thought he threw out his fish, and they dropped to the ground, looking like bars of falling silver in the autumn sun; bracing himself together he began to rise up in mighty rings; he had the advantage of the Falcons, as they had not only to get up to him, but had to rise above him before they could fairly strike. He is really flying now, flying for his life, he thinks, and the slow and measured beat which he usually uses in his steady flight is now all changed, and his fine arched wings beat the air quickly and hard, and up he goes, "ringing round" at a great pace.

The Falcons are old birds and strong and well; they know their work, and hard as Spearbill flies they can fly faster, and they, too, ring round and upwards until at last one gets well above the Heron, and closing its wings, stoops slanting down with immense speed; but Spearbill sees, and just manages to swerve, and down the noble Falcon goes beneath, only to rise almost as quickly with a splendid curve, and start again to ring round to get above.

The other Falcon is stronger and more wary, and stoops like a flash of light, striking hard into poor Spearbills's back and sending a bunch of feathers floating through the air. His mate now strikes again and "binds on" to Spearbill, and they all three come slowly down, buoyed by their splendid wings until they reach the ground. Spearbill feels his feet touch the earth, and quick as thought takes a firm stand and strikes with his long and terrible bill at the Falcons; but they know the trick of it, and loose Spearbill as he strikes, only to bind on to him again. Spearbill can hardly hope to win against two enemies

such as these, but he is young and tries to fight; but before he can do any damage to his foes he is caught round the neck by a man who has run up to help. Another man takes in the Falcons, and Spearbill, much frightened, but with little hurt, finds himself held firmly on the ground, while a ring is fixed to one of his legs; and much to his surprise, after the men have looked at him, he is loosed again, and away he goes, feeling somewhat dazed and very fearful until he gets back to the tree of his old home.

(To be Continued.)

Notes on Migration.

The migration of birds is a subject of never-ending interest to all students of wild-bird life, especially just now when thousands of feathered creatures will be shortly arriving on our shores from a warmer climate. The autumn migration is, however, the one of special interest to us, inasmuch as we are able to see and mark some of the doings of the wanderers. We watch the Swallows and the Martins gather in enormous flocks, sunning themselves in the early sunshine of the cold autumn mornings, or perched in long rows on the telegraph wires by the roadside; or we see a restless company of Pipits or Wagtails flitting about our fields and meadows a day or two before passing south, and these movements are interesting as being part of the migration. Residents nearer the sea have even a better opportunity of studying the subject; they see the gathering flocks, not of one species only, but of many. Birds of quite opposite habits will fraternise freely at this period, the Finches with the Owls, the tiny Goldcrests with our largest species, the graceful little Willow-Wrens with the bold Shrikes; they are all equally affected, all anxious to reach a distant land. Migration across the sea is not the only movement of bird life. In some countries (Switzerland, for instance), migration takes place from the mountains to the warmer valleys. In others the birds journey from the woods to the open fields, some from the coast to the inland districts. In our own land we have numerous instances of this migrating movement.

Universality of Migration.

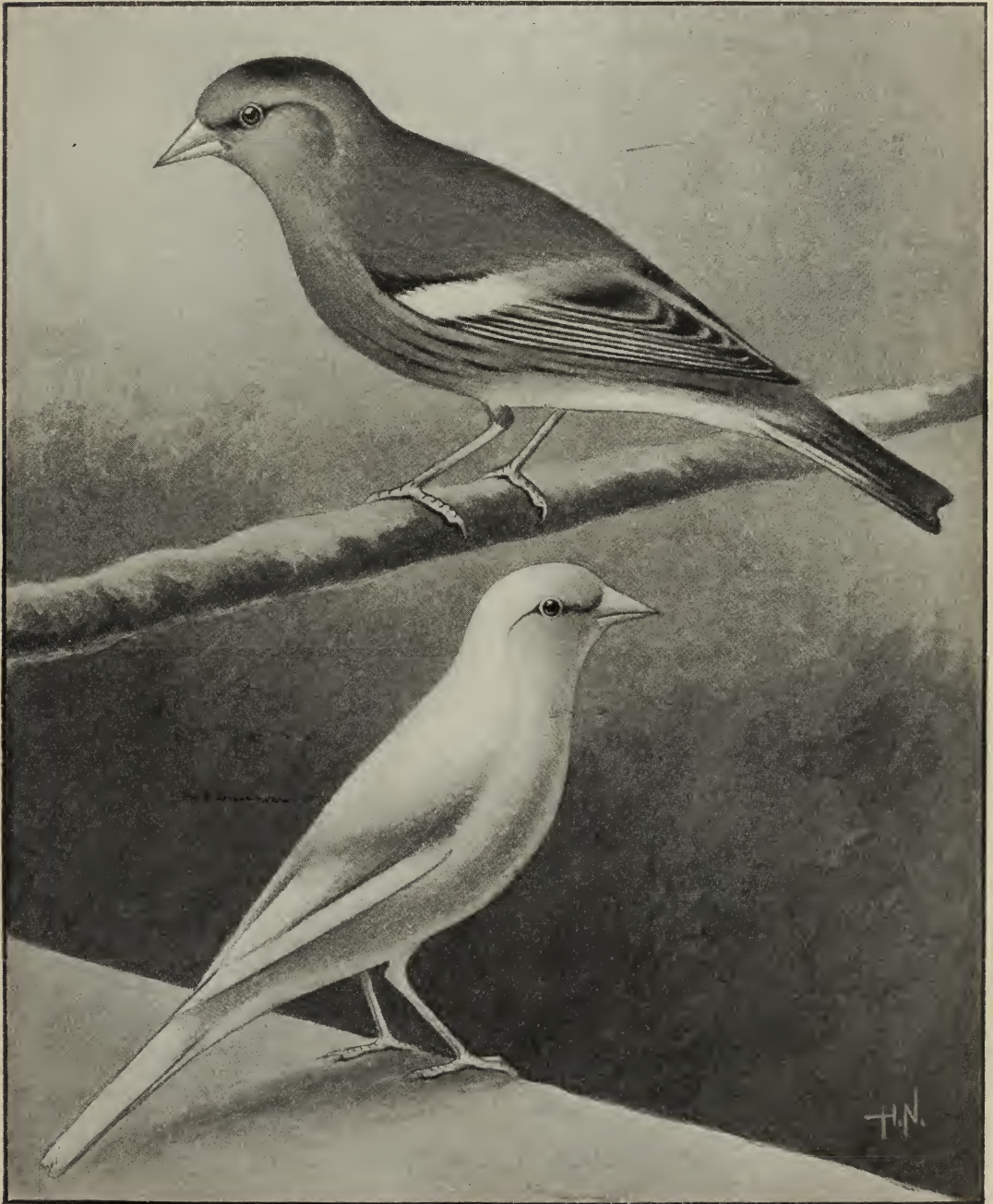
Nearly every species is more or less affected by it; the familiar Robin comes from the woods and the country side to the homestead; the Blackbirds and Thrushes that nested in our shrubbery have gone, and others of the same species have taken their places; the Grey Wagtail migrates from the mountain stream where he has spent the summer months to the brook by the lowland village; the Dunlin moves to the coast from the heaths and moors, the pretty Twite comes down from the mountains. The common Skylark is affected curiously; enormous flocks pass over the seas, others move about the country, influenced in their movements by the vagaries of the weather and the food-

supply. Most birds pass to the land their predecessors had wintered in before them; but some, like the Snow Bunting, wander aimlessly about, driven hither and thither by the severity of the weather; their true home is the north, and they do their best to get there, but are as frequently driven back. Yet, keeping as near the snow-line as possible, they subsist upon any seeds, buds or berries exposed to view. The route and destination of birds going to distant lands is worth a moment's notice.

The Beginnings of the Movement.

Migration has been going on for ages, and in the far distance the movement was simply a movement of resident birds, and certain well-marked routes were used as they are at the present time in the continent of America. As the world gradually changed, the migration extended to lands farther south, but the routes used are still retained. The journey would increase as the cold extended, and in the summer the birds would strive to return to their northern homes. In this way well-marked routes would be passed from parents to children, and now we see some species making journeys of long, weary miles across boisterous seas, when by a little deviation in the route they could pass comfortably from country to country. As an instance, many birds cross the North Sea, when by a slight change of route they could journey by the coast-line in their migration from Northern Russia. By following such old roads birds must lose their lives in numbers; hundreds must perish by the way. In spring they come from the south, from Africa and the South of Europe. In autumn the majority journey south, but many pass from east to west. Some follow the coast-line and strike across the open sea, others take the mountains or some great river as their guide and landmarks. Some fly by the light of day, others during the night, and at such times many crowd round the lanterns of our lighthouses. The subject is full of interest; the cause is undoubtedly the supply of food, but this does not explain all. Why does the bold Shrike, an apparently strong, lusty bird, leave us when the summer sun is still shining, while some of the tiny Warblers who subsist almost solely upon small insects stay till the early frost compels them to go?

Goldfinch-Canary Hybrids.



Typical dark and clear specimens. The former is much the easier to obtain ; the "clear mule" is so rare that it might almost rank as a "sport," and is worth its weight in gold.

The Evolution of the Canary.

No. 1. The Yorkshire Canary.

By C. A. HOUSE.

Author of "The Canary Manual."

This is not a scientific article, nor one of a highly technical character, but a plain practical one, in which the writer will endeavour to show how, by the constant and continual selection of the highest and best forms by the breeder's art, the Yorkshire Canary of to-day has been evolved from the coarse, ungainly, slovenly bird which was known as a Yorkshire Canary some half a century or more ago.

A Modern Invention.

The breed named after the county of broad acres is not one of the oldest; in fact, it may almost be said to be one of the most modern, as the London Fancy, the Belgian, the Lizard, the Lancashire, and the Norwich were all known and, comparatively speaking, largely bred before ever the Yorkshire, as the Yorkshire, was known.

How it first made its appearance is, like many other things, somewhat obscured by the lapse of years, and the fact that of the early days of the Canary Fancy, as a Fancy, we have few reliable records. This is not to be wondered at when one considers that it was not until the twentieth century was out of its swaddling bands that we had a journal devoted solely to the chronicling of the doings of the breeders of Canaries and other Cage Birds.

Some records of the past tell us that the Yorkshire was evolved from the crossing of the Lancashire and Norwich varieties, others that it is the result of a blend of the Lancashire and the Belgian, whilst others aver that the original Yorkshire was simply the wastrel Lancashire. As the Irishman said, "There cannot be smoke without fire," and for the purposes of this article we may, I think, take it that there is a modicum of truth in each of these divergent claims.

The Yorkshire's Pedigree.

In the ages that are gone the stronghold of the Yorkshire breed was the villages and towns immediately on the border of the two great Northern counties, and in those days, and those immediately preceding them, it seems very possible that the Yorkshire and the Lancashire were practically one and the same bird; but the Yorkshiremen wishing, like the Lancastrians, to have a breed named after their own county, took the finest and slimmest of Lancashire birds, and, by careful selection and mating, made them somewhat different from the originals. The style was undoubtedly introduced from the Bel-

gian, which also supplied the fine head and neck and neat whip tail, so characteristic to-day of the bird of grace and elegance.

Not content with effecting improvements in the contour and carriage of their birds, the early Yorkshire breeders wanted to make them more attractive still, and thus resorted to the Norwich to obtain colour and quality of feather. In those days the Norwich, as it was naturally produced, was far more a bird of colour than it is to-day, for the breeders of the rich-hued ones often dipped into the Lizard blood to improve both quality of feather and richness of colour.

This would account for the shortening of the Yorkshire compared to its progenitor, the Lancashire. I cannot remember the bird itself more than thirty years back, but I have known and talked with fanciers who could speak of fifty and sixty years ago.

From them, and from illustrations which I have seen of the early Yorkshires, that is, in the days when the breed had become established, it was a smaller bird than it is to-day. The Lancashire undoubtedly is a bolder, stronger, and more massive fellow than his ancestors of the time of which I write, and bears now the same relative shape and size to the modern Yorkshire that his forefathers did to the forerunners of the slim and graceful ones.

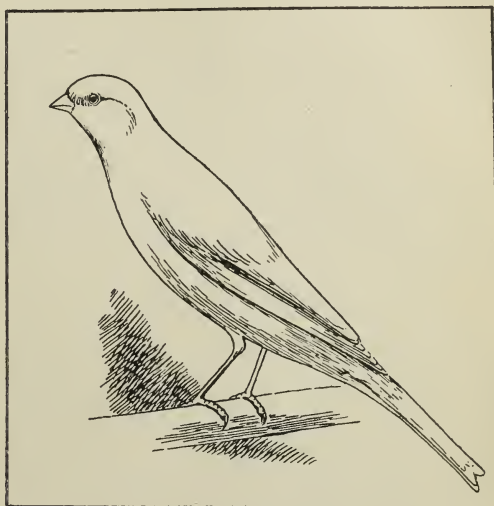
Yorkshires of Former Days.

Only a few years ago there passed to that bourne whence none return one of the oldest of the old Yorkshire breeders and exhibitors, Mrs. Luke Belk, of Dewsbury. Mrs. Belk had in her possession an illustration which I believe was the first ever produced, in a newspaper, of a Yorkshire Canary. The originals were a pair of birds owned by this lady's husband, and had some renown as winners of copper kettles, which were the principal prizes in those days. These birds were much smaller than the Yorkshires of to-day. When I say smaller, I mean they were less both in substance and length, and they were not so upright in carriage. Except that they were not so neat in the head, they were somewhat similar to the Border Fancy of to-day, although rather more robust and rotund.

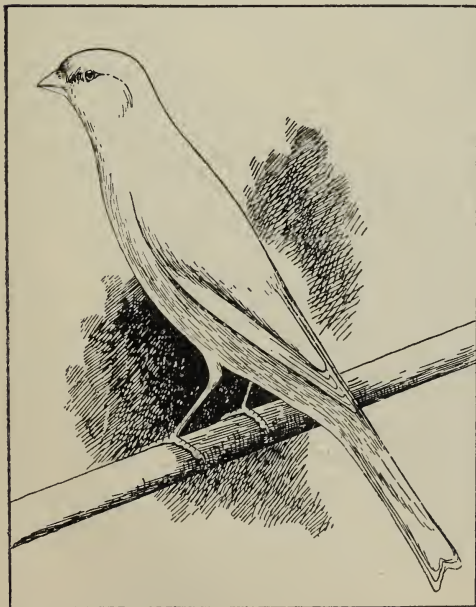
Judging from my conversations with Mrs. Belk, and my sight of the drawings of those old-time champions, I should say that in those days the Belgian had been used to get the fineness, but that the after introduction of the Nor-



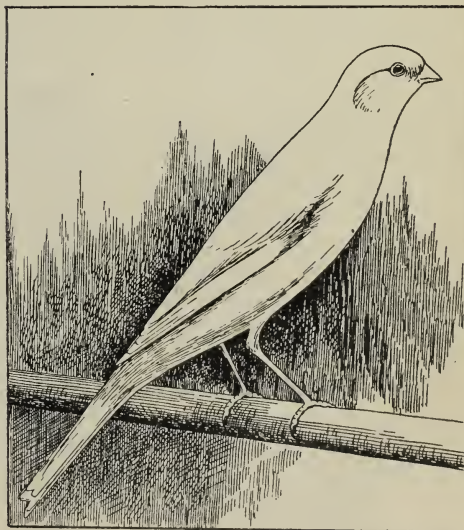
The Yorkshire-cum-Lancashire of the early days
of the Fancy.



The Yorkshire after the refining influences of the
Belgian and Norwich crosses.



The Yorkshire as it was just previous to the formation
of the Yorkshire Union.



The Yorkshire after a year or two's fostering by the
Yorkshire Union.

wich, which most probably was made from the hen's side, had destroyed the erectness of carriage which one would associate with the grafting of the Belgian stock on the original Yorkshire.

In those days, as now, there were turbulent spirits in the Fancy, men who, not content with improvement by natural selection and evolution, sought to change the breed by the introduction of more alien blood. They wanted something larger. This craving led to the reintroduction of the Lancashire blood, with its attendant looseness of feather, heavy, flat heads, strong beaks, and broad shoulders. Such was the bird at the time when I first remember it thirty years ago.

Two Influential Works.

Just previously to this the Fancy had been given the first edition of the late R. L. Wallace's Canary Book. This, the first work published dealing with the Canary Fancy from a general Fancy standpoint, was published in 1875, and was followed three years later by that splendid work, "Canaries and Cage Birds," the Canary section being from the pen of that most versatile and brilliant writer, the late W. A. Blakston. Although only an interval of three years separated the publication of these two works, the illustrations of the Yorkshire Canary in each were vastly different. In both the drawings were quite unlike the winning birds of the period, the artists presumably sketching from an ideal and not from life. Certain birds were sent from Yorkshire to the artist for Blakston's great work, I know, but the plates given were not portraits of the same. If it were otherwise, how comes it that the type which breeders are striving to perpetuate to-day is that given in this work of nearly thirty years back?

Those of my readers who remember the Yorkshire at the time mentioned will, I think, agree with me that they were not, except in the imagination of the artist, the fine slim birds which were portrayed as representative of the breed at that time. The old idea that a Yorkshire should pass through a lady's wedding ring was the lofty ideal at which breeders of the day aimed but never attained, and this has not been attained even by the more keen and scientific breeders of the twentieth century.

The Influence of the Cinnamon.

About twenty-five to thirty years ago great efforts were made to improve the quality of feather in the birds of that day, and much was done by the use of the Cinnamon blood, which had for some time been used by the breeders of evenly-marked Yorkshires, a breed which seems to have almost died out. These experiments met with great success, and a change for the better was quickly apparent so far as feather properties were concerned. Still, the big birds held sway, despite the efforts of some who were

striving even then to reach the wedding-ring ideal.

In those days colour was not thought so much of as it was later on, and of the many efforts which have been made to work improvement in the Yorkshire I remember none which have met with more immediate and successful results. For several years the champion birds were really all that one could desire as far as quality of feather was concerned, and even to-day the winning Yorkshires are not upon any higher plane so far as this one property is concerned.

A Run on Size.

A few years later the size craze again gained the upper hand, and with it disappeared much of the beautiful silkiness of feather which had been produced by the Cinnamon blood. The introduction of the K.-N. feeding process had also been closely followed by Yorkshire breeders trying what they could do to vie with their Norwich brethren in the matter of colour.

Thus between the fight for colour and that for size the feather properties were somewhat lost sight of. The birds grew gradually larger and stouter, and were reverting to the old Lancashire-Yorkshire type, fostered in some measure by certain judges who were inclined then, as some are to-day, to favour size at the expense of more valuable properties.

A Healthy Reaction.

Everything comes to those who wait. The lovers of style and quality had waited long for the reaction which came in the closing years of the eighties, and culminated in a series of meetings in different parts of the county in the year 1890. These meetings, which resulted in the birth of the Yorkshire Union, roused Yorkshire breeders as they had never been roused before. They were made to see that they were on the wrong tack, and that the large, coarse birds were not the *beau ideal* of what the champions of the breed should be. From those meetings resulted, as I have said, the Yorkshire Union of Ornithological Societies, a Union which brought the breeders of the county into closer touch with each other, brought about a feeling of keener rivalry, yet at the same time did much to promote good feeling between the different societies constituting the Union. Immediately it had settled the formalities connected with its institution and constitution, this body turned its attention to the drawing up of a standard for the different sub-varieties of the breed. This gave a great impetus to the breeding of Yorkshire Canaries, because all were united in one common purpose, and all bound to conform to the standard agreed upon.

The Union to the Fore.

Much enthusiasm was engendered by the work of the Union, shows became better supported, and fanciers attended in larger numbers than they had done before. This led to the greater exchange of ideas, with corresponding

improvement in the breed. The Union had said the Yorkshire Canary as it then existed was too long, too stout, and not fine enough in feather, and to this all agreed.

Better still, with one mighty effort all set themselves to correct and remove the faults which they acknowledged were in existence. In a couple of years great improvement was seen in the birds which were being shown; they were tighter in feather, displayed more nerve, and were slimmer and finer in body. Gone were the flat skulls with overhanging eyebrows, much of the objectionable breast frill had disappeared, wings and tails were more tightly braced and smartly carried, whilst there was much improvement in the carriage and deportment of the bodies.

Much of this was due to the introduction of Belgian blood, which certainly gave finer heads and necks and vastly improved the erectness of carriage, even as it conduced to the neater wings and tails. The Belgian, however, was not responsible for all the improvement. The lovers of colour and silkiness of feather had

worked back on to the Cinnamon blood, and this was to be seen in the vast increase of birds with pink eyes and Cinnamon-marked plumage. So numerous did these Cinnamon-marked Yorkshires become that in the third year of its existence the Yorkshire Union Council had to set about the drawing up of a Standard of Perfection for Cinnamon Marks, or, as they were more generally called at that time, Cinnamon Ticks.

The Defeat of the Giants.

It is strange how the craze for size will every now and then rear its dragon-like head and attempt to dominate all breeds. Here was the Yorkshire Canary making rapid progress towards the goal of perfection when the size mania again seized some ardent spirits, and so insidiously and swiftly did they accomplish their work by production of some large birds of good feather, that ere the majority of the breeders could think or act these big birds had caught the judges' eyes, captivated their fancy, and were securing the bulk of the prizes. The

Yorkshire Union, however, brought matters to a crisis by sending forth to the judges its ukase that the big ones were to be barred. This brought about the dismissal of the big heavy-feathered birds, since when the Yorkshire Canary has been bred consistently upon better lines, and is to-day a better-proportioned, a finer-feathered and a more stylish bird than it has ever been since the days when it was first divorced from its Lancashire progenitors.

A great factor in this has been the establishment of the Yorkshire Canary Club, which, by its many costly specials in kind, its cash specials, and its hitherto unheard-of valuable challenge trophies, has given such an impetus to the breeding of Yorkshire Canaries throughout the length and breadth of the kingdom that to-day I venture to say more birds of the variety named after the county of cricket and football fame are bred in one year than a short time back were produced in half a decade. The establishment of the Cinnamon - Marked Canary and the Southern Yorkshire Canary Clubs has also conduced greatly to the breeding and popularising of the bird of grace and style.



A. Temple

The Yorkshire Canary of Long Ago.

A Winner at the Crystal Palace Show of 1875.

(Reproduced by the kind permission of Mr. Luke Shaw, of Dewsbury, the nephew of the Exhibitor).



No. 5. Yorkshire.

The Yorkshire Canary of to-day after sixteen years' breeding under the Yorkshire Union standards.

Little Bird Friends.

A HISTORY RELATED BY MISS H. B. RUTT FOR YOUNG BIRD LOVERS

(Continued from p. 84.)

CHAPTER IV.

TOFF, THE ZEBRA FINCH.

Now we come to one of my most charming birds. "A perfect little darling" I am sure you would pronounce him to be if you could see him. He is not much larger than a Wren, and is a little gem of beauty and neatness. I will try to describe him.

His Costume.

He has a coral-red beak, with legs and claws the same colour, but rather lighter. The top of his head and his back are a lovely pearly grey, shaded with a darker grey. His throat and the upper part of his breast are silvery, with tiny streaks of black across. This is, I suppose, why he is called a Zebra Finch, though these delicate markings are not much like the coarse black and white stripes on the large Zebras that one sees at the Zoo. Then there is a band of black, and all the rest of his breast is cream-colour, except down each side close to his wings, where it is orange-red with white spots. On each cheek there is a large orange-red patch. Can you imagine him? I called him by the slangy name of Toff, because you know that means somebody who is tremendously particular about his appearance. This little Toff keeps himself always in the pink of condition. Never a feather awry, nor a speck of dust to be seen anywhere. He looks as if he were dressed in a perfectly-fitting costume made of satin, that had just come out of a band-box.

His Character.

Then as to his character. He is the most plucky little person you ever saw. Although he is so small, he will never allow himself to be put upon for a moment. He has his own rush nest in which he sleeps at night, and if any other bird dares to go in, no matter how big he is, Toff attacks him and soon sends him off, although I must in justice say he only acts in self-defence; he never begins a quarrel. He is a very fussy little fellow. He is almost always on the move, and can do nothing without announcing it aloud.

A Continual Chatterbox.

For his size he has a very clear, resonant voice. You cannot help hearing it. It is not very musical, very much like a child's penny trumpet. He chatters away like this: "Oh, what a nice day this is; it makes me quite hungry. I must go down and get some seed. Roo-too-too-too-too! Oh, dear, this is not the seed I want, I must go to the other side. Roo-too-too-too-too!" Then, to another bird already eating, "Get out of the

way; roo-too-too! Don't you hear me? This is the seed I want. Roo-too-too-too-too!" He keeps up this silly unnecessary talking nearly all day. It sounds very pretty and amusing to me. But I daresay it is as worrying to the other birds when they want to think a bit or doze, as is the talk of people who will speak their most trifling passing thoughts aloud. Their remarks are of no interest and need no reply, but they are just enough to spoil the enjoyment of our book or distract our thoughts.

Toff has a little song, as well as the constant "blowing of his own trumpet." A very quaint little song it is, too. Something like "Roo-te-tiddy, roo-te-tiddy," repeated many times. But Toff has no sense of humour, and does not know in the least that he is funny, and is quite astonished and rather offended when the other birds or his human friends laugh at him. He thinks himself a very fine gentleman indeed, quite a superior person, and considers that all he does is absolutely right and quite the correct thing.

Always Cheery.

But there is one very good point about Toff that I ought to mention, and that is that he is always happy and contented. However dismal the English winter may be, he never grumbles. Some of the other birds do, but not he. When the sky is leaden, an east wind blowing, and not a gleam of real sunshine for a week, still his little trumpet is heard, his toilet is performed as scrupulously as ever, and the fussy, cheery little chap, as bright and active as possible, shames the grumblers who are moping in corners and not trying to make the best of it. He is very friendly and sociable, calling out directly in response to a whistle.

Toff and the Time-keeper.

Indeed, he carries this to a very amusing extent. I have a large carved Black Forest clock in the room where I keep my birds. At the hours and half-hours, instead of its striking in the usual way, two little folding doors open, and out comes a wooden soldier with a bugle to his lips, and appears to blow as many blasts as there are hours to strike. Of course the sound is really produced by some mechanism inside the clock. It is very loud and musical, and Toff loves it. Directly it begins to strike he generally roo-too-toos an accompaniment. Once, long after the birds had gone to sleep, I was in the room. I suppose the light and my movements disturbed Toff. When the clock began to strike the hour Toff tried to sing to it as usual, but in *such* a thick, sleepy voice. After one or two notes he gave it up, and I suppose nodded off again.

The Late Mrs. T.

When I bought Toff I bought his little wife, too. Her name was Opal. She was very pretty, but not so smart as her husband, being nearly all light grey, but she, too, had a red beak and legs. You cannot possibly imagine two people more devoted to each other than these two were. They would roost in the same little rush nest, squeezed close together, sit together on the perch when wanting a rest, bathe together, and in fact they were never separated. If Opal said, "I shall go and get some millet seed," he always answered, "I want some too, roo-too-too!" and together they would go down to eat. If Opal had said, "I want some canary seed," his answer would have been just the same, "I want some, too." Curiously enough, they were always both thirsty at the same moment. In fact, their two lives were like one life. But, alas, gradually Opal began to get ill. I never found out what was the matter with her. She still enjoyed her meals, and her feathers were sleek and neat as usual, but she became weaker and weaker. She used to come down to eat, and then scarcely be able to fly up to the little nest again, though I could see nothing wrong with her wings or claws. Toff took the greatest care of her. While she was feeding he stood close by in case any of the other birds should worry her, chattering of course all the while in his fussy way. "My wife's here, now don't disturb her—don't disturb her."

The Beginning of the End.

At last she really *could* not get up to her nest. Then whenever I came into the room I looked to see where she was. Sometimes she was sitting for cosiness in the seed drawer, Toff standing by. Then I called her, and she came out, and let me take her up in my hand. I opened one of the upper doors of the cage, and though I could not quite reach the nest, I could almost. She hopped from my hand on a branch, and then into the nest, and called out delightedly, "Toff, Toff, Toff!" He darted up to her, kissed and petted her, and then they sat cuddled up together. I did this several times a day. But in less than a week one morning I found her dead. Ah, it was sad to see Toff's sorrow then!

The Way of the Widower.

He seemed really heartbroken. He blew his little trumpet all day, calling, calling, and getting no answer. He was scarcely still a moment, jumping behind branches, under the seed boxes, inside the seed-boxes, into all the corners. When I came near the cage he cheered up and roo-too-tooded brightly. He had grown accustomed to me handing him up his little wife, and he felt sure I had her somewhere. Poor little fellow; he had his rush nest all to himself that night. The next morning, though he still called "Opal, Opal," and searched for her in corners, he was able to enjoy himself a little, and on the third day—shall

I confess it? Yes, I must tell you the truth—he really seemed to have forgotten her, and was his own jolly, fussy little self again.

Why Birds Forget.

Now his love and devotion to Opal were most genuine, so how was it he could so soon put her out of his thoughts? Well, birds, as a rule, are very quick in all their ways. The heat of their bodies is greater than that of any other animal, their circulation more rapid than most. Their eyes are wonderfully sharp. Throw a few crumbs of bread on the ground when not a bird is in sight. How long will it be before ever so many are down? They are after the crumbs instantly. Their feelings, too, though so warm at the time, are not lasting. A sudden noise, a passing shadow even, will apparently throw a flock of birds who are down feeding into a perfect panic of terror. They rise from the ground in a hustling crowd, eager to hide themselves anywhere. But the next instant, instead of crouching trembling in their retreat, their little hearts beating with fear, as one would expect, down they are again, as cool and self-possessed as before. No, it was no want of feeling that made Toff so soon get over his loss, only the wonderful spring of life and joy within him, and I must say it pleased me that it was so, for a moping, unhappy bird is as unnatural and painful a thing as an unhappy child.

From a Land of Contraries.

Where is Toff's birthplace? Nearly as far away as it can be, to be on this earth at all. I remember when I was a child my old nurse used to tell me that if we could make a very deep hole right through the world till we came out the other side we should be in Australia. This is not strictly true, but it is not very far wrong. Australia is, as you know, an island, but it is so large, larger than the whole of Europe, that it is commonly spoken of as a continent; and it is part of the British Empire. Everything in Australia seems to be just exactly opposite to what we are accustomed to in England. Midsummer there is at Christmas, and the shortest day is in June. True, the sun rises in the east, but he passes round by the north to his setting in the west. The south wind there is a cold wind, the north a warm one. The native trees and plants, and the native animals, too, are different. There are wild swans, but instead of being white they are black.

Natives and Immigrants.

When English people began to settle in Australia, they for love of Old England introduced English trees, flowers, and animals. Most of these soon grew accustomed to their new home; indeed, so much so that some, especially the rabbits, multiplied to such an extent that they became a perfect nuisance. The Australian

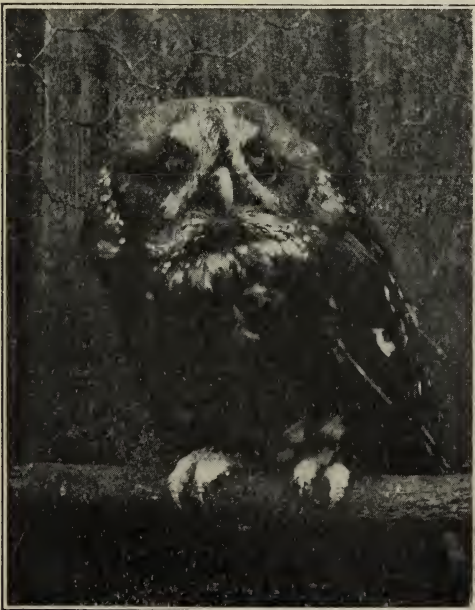
natives (aborigines or blackfellows they are generally called) are a very degraded race, very dull and stupid, and though efforts have been made to teach and civilise them, they have met with very little success. They are now rapidly dying out, as most native races do when white men settle in their country.

The Home of the Zebra Finch.

It is in South Australia that the greater number of Zebra Finches live. I have some friends who live in Adelaide. In the summer, about Christmas Day, it is so extremely hot there that they generally leave the town and have a holiday in the country among the slopes of Mount Lofty. I imagine them sometimes sitting enjoying the cool of the evening, seeking a little shade under some blue gum trees, and saying to each other, "How the Zebra Finches are chattering!"

Those English who have settled in Australia, and even their children who have been born there and have never seen England at all, still have such a love for the mother country that they speak of it affectionately as "home." They try, too, though all is so different about them, to keep up some of the customs of Old England. Though it is so very hot at Christmas time they like to have roast beef and plum-pudding for dinner. It must be hard work to enjoy these things, I should think; fruit and ices would seem more tempting. Then they *talk* of white frost and snow. But these are so rare in Australia that only a few people have ever seen any there.

(To be Continued.)



Brown or Tawny Owl.

From a living specimen reared by hand, and photographed by Mr. Fred Cusden.

In the Woods and Fields.

By H. NORMAN.

A Rare Resident Bird—The Dartford Warbler.

Among the rarer birds we must number the Dartford Warbler. He is an English resident bird, and was first known to science through a specimen that was shot at Dartford, in Kent. He is a bird of the commons and heaths, and we may occasionally get a glimpse of his tiny body as he skulks among the furze bushes. He appears to feed almost exclusively upon insects, and being a resident species is constantly struggling for existence.

Why a bird of such fragile build should be a resident with us, when more robust species leave before the summer days are past, is very puzzling. So delicate and frail is this little chap that one watches his incessant efforts to sustain life with a feeling of pity. He appears never to wander far from the common where he first saw the light, and given a favourable season or two will slightly increase in numbers, but the first very severe winter cuts off many of them, almost to extermination. He closely resembles the Grasshopper-Warbler in his skulking habits, scrambling from brier to bramble, from furze bush to bracken, with just a shaking of the undergrowth to indicate the spot and the direction in which he is moving. He rarely takes wing, and must be hard pressed indeed to indulge in a lengthy flight.

When spring advances and the gorse bushes are laden with the golden blossoms, this little Warbler appears to awaken to new life; then he may be seen flitting about with renewed energy, running up the stems of the bushes and dropping suddenly into the thick undergrowth, reappearing elsewhere and warbling his sweet little song. Occasionally he will dart into the air, fluttering after a passing insect in the manner of the Fly-catcher, but lacking the Fly-catcher's adroitness. He will occasionally be seen in some quiet garden adjoining the heath or common hunting among the fruit-trees, and no doubt in the autumn months he varies his diet by indulging in the wild fruits of the brambles and bushes.

Few have had the good fortune to see the cunningly-concealed nest of this species; it is placed in the thickest parts of the common, where the tall grass meets the thick bushes, and last year's leaves rest among the dead twigs. The construction of the nest aids concealment; dead grass-stalks, scraps of moss, and withered furze, lined with finer material and a few stray hairs interwoven. It is a pretty little home, not over deep, and flimsily built. The small eggs closely resemble those of the Whitethroat, but are just a shade smaller and somewhat darker in markings.

A History of Birds.

By W. P. PYCRAFT, A.L.S., F.Z.S., Etc.

(Continued from p. 73).

CHAPTER II.

CONCERNING FEATHERS.

Though feathers are so common, so easily procured, yet but few people, even Ornithologists, realise what marvels of structural beauty, what wonders of mechanism, they are; nor is the peculiar fashion of their distribution over the body now generally recognised. Those who have spent their lives in the study of live birds, as many of my readers have doubtless done, need not be told that the feathers of a bird are peculiar in that they are not, as a rule, generally or evenly distributed over the body after the fashion of hairs on a dog, for instance, but, on the contrary, are arranged in long and generally narrow bands or "tracts," separated by wide, bare, or sometimes down-clad, spaces. The fact that these bands vary greatly in shape among birds was first realised by a German naturalist named Nitzsch, who made a long and careful study of the feather tracts of all the birds he could get hold of. As a result of his patient work he was able to show that the variations in this arrangement followed certain definite lines, each group of birds possessing a type peculiar to itself, and, for the purposes of convenient description, he gave these tracts distinctive names, which, in the main, are followed to this day.

DISTRIBUTION OF FEATHER-TRACTS.

Briefly, as a result of his work, he distinguished: (1) a head tract, formed by the feathers clothing the head; (2) a spinal tract, extending from the head down the back of the neck, and along the back to the tail; (3) a ventral tract running from the throat down to the base of the neck, where it branches at the shoulders, to run down over the breast and abdomen in the form of two bands, a broad outer, and a narrow inner band; (4) a pair of humeral tracts, which, crossing the upper arm, form the feathers known as the scapulars; (5) the wing tract, including the quills and wing-coverts; (6) the tail tract; (7) the femoral tracts, which run across the thighs; (8) the leg tracts, which cover the legs below the knee.

DIFFERENCES IN VARIOUS GROUPS.

The most important of the variations which these tracts present are to be found in the spinal and head tracts. Thus, in the first named, the spinal tract, in the Swifts, encloses a bare space over the middle of the back; while in the Swallows it divides into a fork in this region, leaving the hinder portion of the tract in the

form of the usual straight band. In the Finch tribe the middle region of this tract is diamond-shaped. The head tract, again, often encloses a space; as, for example, in the Humming-birds and Mouse-birds of Africa. The ventral tract similarly presents very marked differences when a number of different kinds of birds come to be examined.

A SIMPLE INVESTIGATION.

Those who may be interested in this question should take, say, a Sparrow, Starling, Thrush, Pigeon and Fowl, cut off the feathers with a pair of scissors close to the body, and compare the difference. Since these differences are constant, and since each group presents a type of its own, it has been found that the "pterylosis," as this arrangement of the feathers is called, affords a valuable aid to the classification of birds. For example, the very wide difference in the pterylosis of the Swifts and Swallows was the first indication of the fact that these birds were not related, as they had always been supposed to be, and later anatomical investigation has given further proof that these birds belong to quite different groups.

In the Penguins and the Ostriches the bare spaces so conspicuous in other birds are hardly traceable, the feathers covering almost every inch of the body.

THE VARIOUS TYPES OF FEATHERS.

So far we have spoken only of the feathers which form the outer surface covering of the bird, the "Contour" feathers, as they are called, because they form the contour or outline of the body. But besides these there are no less than three other distinct kinds of feathers—down-feathers, filo-plumes, and powder-down.

Down-feathers in many birds are conspicuous by their absence, and are developed most abundantly in water-birds, such as Ducks for example; growing not only between the feathers, but over the otherwise bare spaces as well, so as to form a thick undergrowth answering to the under-fur of seals, for instance.

Filo-plumes appear to be present in all birds. They are the long, hair-like growths so conspicuous in the common Fowl when plucked. In some birds they attain such a length as to extend beyond the contour feathers, forming, as in some Cormorants, long white delicate plumes.

The Powder-down feathers are found only in a few groups, such as the Herons and Bitterns, and some Hawks and Parrots. In the Herons and Bitterns they form large patches, a pair on the breast, and a patch over each thigh. Of a peculiar woolly appearance, they are remarkable

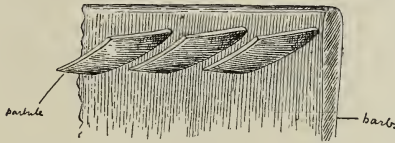


Fig. 3.—Section across the bases of the three barbules (magnified).

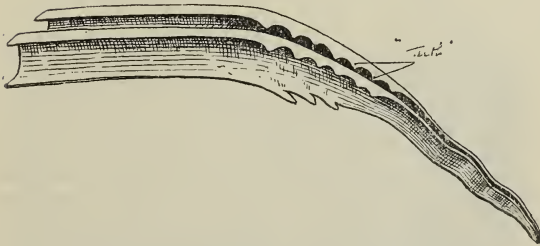


Fig. 5.—Two barbules of the posterior series (magnified).

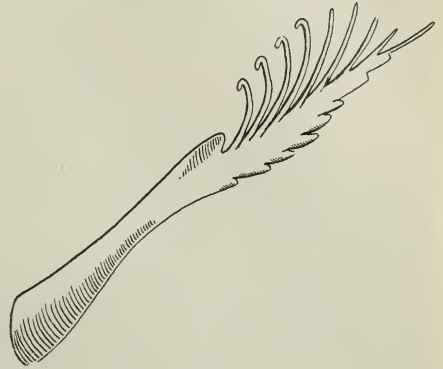


Fig. 4.—A barbule of the anterior series (magnified).

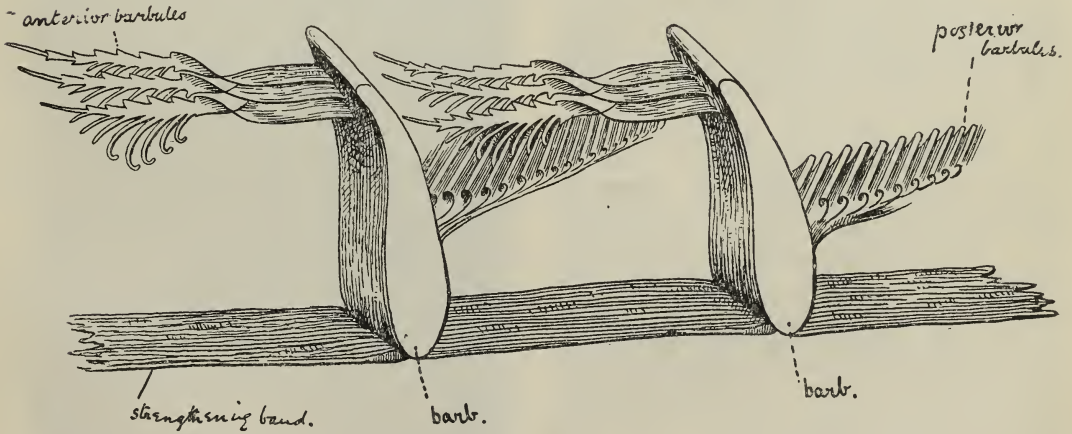


Fig. 6.—Two barbs with barbules (magnified).

Concerning Feathers.

See "*A History of Birds*,"
pages 107, 109, 110.



Fig. 6a.—Diagram to show method
of interlocking.

for the fact that they break up when touched into a fine powder, which when rubbed between the fingers gives an indescribably smooth feeling. It is the powder from these remarkable feathers which gives the peculiar bloom to the beaks of many Parrots, as well as to the plumage. As to the real purpose of the powder, however, we know nothing.

STRUCTURE OF A FEATHER.

This brief survey of feathers would not be complete without a few words as to structural characters.

In the typical feather, say, a quill-feather, two main parts are to be distinguished—the stem, and the broad flexible blade known as the vane, or vexillum (fig. 1, v.) The stem may further be divided into the quill or calamus (c)—the hollow part below the vane—and the shaft or rhachis, which is square in section and filled with a white pith. The vane runs along on either side of the rhachis in the form of a series of tapering, flattened rods, the “barbs.” They are set so closely together that they must be carefully sought for. They give to the vane that finely-grooved appearance, or rather the appearance of a series of fine lines running obliquely outwards from the shaft. If an attempt be made to pull these apart it will be found that some considerable force must be used, and this is owing to the fact that they are locked together by a second series of flattened rods, known as barbules, so small as to require the microscope to reveal them. But the mechanism by which this vane is held together is so wonderful that I venture to ask my readers to bear with me while I endeavour to explain it.

MECHANISM OF INTERLOCKING.

In the diagram of a feather (fig. 1), depicting the different parts, you will notice on the right side, shown as if seen through a magnifying glass, the appearance of two barbs and their barbules; while in fig. 3 you will see what a section looks like when taken across the barbs, parallel with the main axis, in the direction shown by the arrow in fig. 1, and seen from the cut ends. This figure, of course, is drawn from a very highly magnified section. You will now see that each barb bears two quite different kinds of barbules, set so that while one series is cut across the other remains uninjured. The reason for this will appear presently. The uncut series in this diagram are those known as the anterior barbules, because all point towards the top of the feather. Each takes the form of a ribbon-like plate set slantwise into the barb (fig. 3), and having half its length deeply cut, as with a fret-saw, to form a number of very delicate, almost thread-like pieces, the upper short and bearded, the under terminating in little hooks (fig. 4). The portion bearing these hooklets is twisted in the broad ribbon-shaped portion, so as to take a vertical instead of a slanting position. The

series of barbules which run along the other side of the ramus or “barb” are known as the posterior barbules, and differ entirely in shape from those of the anterior series just described. Like the anterior series, however, they may be described as ribbon-shaped, but they are curled so that the lower edge touches the lower segment of the curve next in front of it, thus forming a series of troughs, as in fig. 6, where they are seen in section. The upper edge of each of these curved plates, you will notice, is turned over scroll-fashion, and further, as in fig. 5, it will be seen that the end of the plate is bent upon itself and notched.

HOW A FEATHER HOLDS TOGETHER.

Now, when in position, the bent ends of the posterior series are stowed away under a sort of roof, formed by the slanting, ribbon-like overlapping bases of the anterior series; while the hooklets of the anterior series are thrust down into the troughs formed by the posterior series, and further, so that they catch hold of the scrolled edges of the posterior series as in fig. 6 and 6A. Now these scrolls, or troughs, are kept apart by a very wonderful yet simple contrivance, the series of “teeth,” or notches, near the end of the upper edge of each barbule—but for these the edges would rub together and cut off the hooklets. In some birds of powerful flight a strengthening band runs along from the lower edge of the barb to the lower edge of that next behind it (fig. 6). This serves to keep the barbs in position during the strain of flight. Thus, then, this marvellous interlocking is the reason why it is so difficult to pull the barbs of a feather apart. In the vane of a Crane’s quill, in a piece of web fifteen inches long, no less than 650 of these barbs were counted, each of which bore about 600 pairs of barbules—that is about 800,000 for the inner web alone, and more than a million for the whole feather, and all these are necessary to hold the vane together.

This system of interlocking is most perfect in the wing and tail quills. In some feathers, such as have a loose, hairy texture, as in the body feathers of many birds, these hooklets are but feebly, if at all developed. The loose feathers of the Ostrich-tribe also lack them, but here they were once all much better developed; when the birds ceased to fly the feathers degenerated and the interlocking arrangement was lost.

What are known as semiplumous feathers are degenerate feathers.

STRUCTURE OF THE DOWN, ETC.

Down feathers differ considerably from “contour” feathers in structure, having little or no shaft, all the barbs arising from a common base. These barbs are, further, very long, and have only very minute barbules. In the Ducks and some other birds these barbules take the form of triangular nodules, while in other birds, again, they are knot-like.

The Filo-plumes have a long, slender shaft with a minute vane at the top. They are apparently a degenerate form of contour feather, judging from the fact that during the earlier part of their development many more barbs are present than are to be found in the fully-grown Filo-plume.

Yet another form of feather is that which is found fringing the mouths of birds like Fly-catchers and Nightjars. Bristle-like, there will yet be found about the bases of many a few weak barbs; the eyelashes of many birds, like the Ostrich, the Ground-hornbill, and some other birds, are similarly fringed with these peculiar bristle-like feathers.

NESTLING-DOWN

The down which covers the nestlings of many birds such as Fowls and Ducks answers to the contour feathers of the adult; but is of a simpler structure. Indeed, it differs in character among different species of the same group. In its most completely developed form it recalls the contour feathers, having a shaft and barbs with weak barbules, but those last have no distinct hooklets, hence the general character of down of the plumage; while in its more degenerate form the shaft is absent, as in a true down-feather.



Mr. C. T. Maxwell (Brixton),

The Champion British Bird Exhibitor whose aviaries and birds, valued at £300, were all destroyed by fire last month.



Penguin and Young.

The latter is one of the first brood (of two), ever reared in England.

Where down is present in the adult it will be found in the nestling just before the feathers begin to appear. In some birds, as in the Ducks indeed, and young Hawks, these early down feathers, or "pre-plumulae," attain to so large a size that they eventually play a more prominent part than the typical nestling down or "pre-plumae," so-called because preceding the plumae or feathers. In young Cormorants the down is wholly made up of this pre-plumulae nestling-down, which is succeeded later, not by contour feathers, but by down-feathers.

Nestling-down in its most degenerate form may be seen in young Pigeons, and the young of most of the Song-birds, while in others it is altogether wanting, as in young Sparrows and those of the Crow-tribe.

THE AFTERSHAFT.

Only in the nestling-down of the Game-birds, Ducks, and the Ostrich tribe is there found an "aftershaft." This, by the way, is a conspicuous feature in the adult feathers of the Emu and Cassowary, where it forms a sort of duplicate of the main-shaft, equalling it in size; while among the higher birds it is never very large, except in the Game-birds, but even here it is downy in texture, and is always shorter than the main shaft.

(To be continued.)



Polly.

Our Letter Box.

To the Editor of THE BIRD WORLD, 154, Fleet Street,
London, England.

SIR,—I am sending you the photos. of my two parrots, Polly and Jimmy, which you said you would like to have for your paper when I wrote to you about them—now so long ago that it is scarcely likely you will remember, but this I am chancing. The delay was first caused by the illness of my young friend who wished to snapshot Polly. Not being able to take her in the open air, it has not been a success; but still, I send you two of them; they are too dark. As these did not succeed, I decided to take Polly to a professional photographer's, where the light would be good. She behaved admirably, and I send you two of these. Jimmy, being in England with friends, had to be photographed there. It seems she behaved shamefully, and could only be taken in her cage. My friends are intensely fond of her, and think her very clever, but she is not to be compared with Polly for intelligence. Polly is a marvel, and everyone finds her so. Both Parrots are, and have always been, in splendid health. Besides the usual seed in their cages, they share *all* meals, and have all the food served at table—tea, coffee, chocolate, bread, butter, jam, soups, meats, vegetables, puddings, cake, etc., etc., and they both know the hours of meals and know

if there is anything on table they have not had a share of, and let one know.

Fresh stone fruit is the only thing that disagrees with Polly, therefore she does not have it. Their feathers are always in splendid condition, and their spirits the highest—exuberant, one may call them—especially Polly's; she is of a more lively and passionate nature than Jimmy. Extreme care in cleanliness and freedom from cold and draughts seem most important. I have had Polly 17 years and Jimmy 10 years.

With best wishes for Christmas and the New Year.—Yours truly,

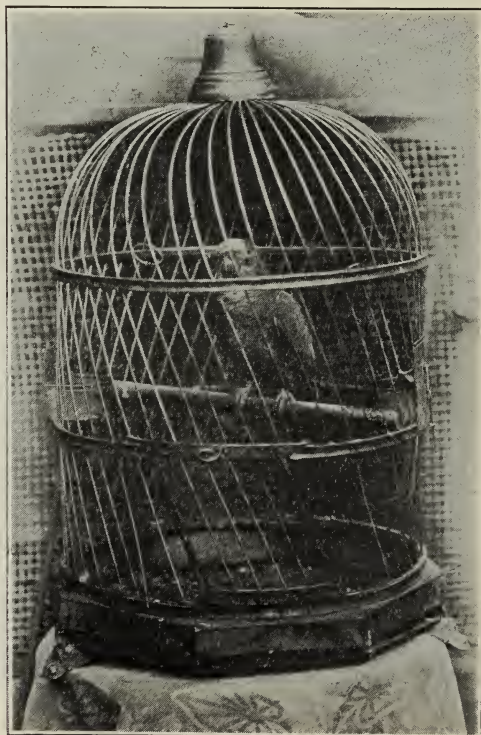
LINA FELICITE LANGLANDS.

Villa la Favorita, Tour de Peitz,
Vaud, Switzerland.

To the Editor of THE BIRD WORLD, 154, Fleet Street,
London, England.

SIR,—I have often come across a plea urged in favour of the destruction of uncommon birds, that such cannot by any possibility breed here. Even if this were absolutely correct, it would be no reason for destroying birds which many would be glad to study in life. But it is not a sound argument in itself, for there are many recorded cases of birds extending their range naturally, and breeding in countries new to them. Thus, the Magpie is known to have established itself in Ireland in quite recent times. The Sand-Grouse also bred here during their last incursion into Europe.

FAIR PLAY.



Jimmy.



THE WOOD WARBLER.

A Dainty Spring Visitor.

Chirps and Chatter.

THE BLACK LARK IN ENGLAND.

There is another new bird to go down on the British list—several specimens of the Siberian Black Lark (*Melanocorypha yeltoniensis*) having been recently shot in Kent and Sussex in January and February last, after some very cold weather. As pairs were seen in more than one instance, it is a great pity the birds were not left alone, as they might very well have colonised the locality—the Romney Marsh is bleak enough to suit even a bird of the steppes. The Black Lark is considerably bigger than the Skylark, and stouter-built, with a

makes it a matter for great regret that they did not succeed in escaping the notice of collectors. Had they been let alone, they might very probably have remained to breed, and permanently colonised the country; and certainly both fanciers and lovers of wild life would have welcomed the accession of a new Lark, considering how very poorly this group of songsters is represented with us at present, there being no abundant species but the Skylark, and no other regularly found here as a breeder than the Woodlark. I hope all readers of the BIRD WORLD will do their best to protect either this or any other



[Photo by]

[W. E. Teschemaker.

Young Australian Crested Doves.

This is the species which it is proposed to liberate in the London parks. The above specimens were bred in a Devonshire Aviary.

stronger bill; it is only the male that is black, and he only in breeding-dress; in winter he is brown, like the female.

A GOOD AVIARY BIRD.

The species is not unknown to aviculturists; it has appeared on the show-bench, and has even bred in captivity on two occasions at least. Mr. R. Phillippis reared a young bird, and a pair at the Zoo nested in one of the pheasantries, right up against the netting. In spite of this very public situation, the young were hatched, but not reared. The hen moved them away from the nest, and then they vanished. However, the experience looks as if the species had a distinct inclination to take kindly to captivity; I believe no other species of Lark has ever bred, except the common Skylark.

PROTECTION OF RARE MIGRANTS.

The occurrence of pairs of this new British species

rare visitant that comes their way, and give it a chance.

THE BIRD ON TOP.

The somewhat Israelitish countenance on the cover this month will not puzzle any reader who has seen the first number of the magazine, which contained an article on Hornbills, in which the Black Hornbill, our present subject, was described and figured. This bird (*Ceratogymna atrata*) is a native of West Africa, and is one of the species most commonly imported here. It is therefore to be regretted that it is also about the ugliest. Hornbills are, generally speaking, quaint rather than beautiful; but this species is really a bit too quaint to be presentable, with its very thick casque or helmet of a dingy horn colour. The body-colour is black, with some white in the tail, and the female bird is distinguished by having a reddish-brown head.

PIED BLACKBIRDS.

There seems to be no doubt that, of all our birds the Blackbird is the most subject to albinism. It is true that Sparrows showing white feathers are common in London, but it is doubtful if this applies generally. An interesting case was recorded recently in the "Field" in which a hen blackbird, nearly entirely white, was watched for some years. She found a mate, and bred, but presumably did not transmit her albinism, as nothing is said about her young being abnormally coloured. In the end she died of wounds received by a cat, but it is very creditable to the recorder of her history, that she was preserved and given a chance to live so long.

CANARIES WITHOUT EGG.

Now that the Canary-breeding season is upon us again, it may be of interest to mention that I tried in 1905 the no-egg system in rearing Canaries. A friend had entrusted his bird to me to keep while the family were away on a holiday, and I mated it up—in July this was—with a hen casually obtained. They bred, and reared three young out of five, the two youngest having been smothered in the nest. They had green food ad lib., especially flowering grass, which they particularly relished, and for soft food only stale cake. At first I mixed ants' eggs with this, but as they did not seem to be eaten, I discontinued their use. I should mention that the birds were in a long box-cage flight, nearly 5 ft. long, out of doors; under these conditions, of course, the particular diet is not of so much importance as it is for birds in small indoor cages. The young had green food as much as they liked after leaving the nest, and all thrived. I parted with them, but have been able to follow the subsequent history of one. But this particular bird is either a singing hen or strangely lacking in virility, for last year it showed no wish to breed.

THE WOOD-WREN.

Those interested in our British warblers will be pleased with our frontispiece, representing as it does that charming species, the Wood-Wren (*Phylloscopus sibilatrix*). This is the largest and least familiar of our three "Leaf-Warblers," the other two being the Willow-Wren and Chiffchaff, the first so familiar from its abundance, and the second from its early, if not very musical note, which has given it its name. The Wood-Wren, in addition to being larger than either of its allies, has the longest wings of the three, this peculiar length of wing being well brought out in the picture. It has the same general habits as the other two, living in trees and feeding on insects, but differs in some details; it more often takes its prey on the wing, is more confined to woods, and does not line its nest with feathers, as do the other two. The eggs also differ, being thickly spotted like the Willow-Wren's, but with a darker shade, thus recalling the Chiffchaff's. Of course this bird, like the Willow-Wren, is not really a Wren at all, any more than the Goldcrest is; the name used to be applied to several small soft-bills.

THE TERROR OF THE OWL.

The case mentioned in Mr. Steward's article this week, of the destruction of a Sparrow-hawk by a Tawny Owl, gives us some insight into the reason why Hawks devour Owls so much. One would have thought that such formidably-armed birds had nothing to fear from these night-prowlers, but it is evident that not even the Hawks are safe when

night gives their nocturnal rivals the advantage. A similar case occurred in America some years ago, when someone amused himself by trapping various birds of prey in the winter and confining them in a large barn. Among these was a Virginian Eagle-Owl (*Bubo Virginianus*), and as their unfeeling captor neglected to supply his victims with sufficient food, the owl devoured his fellow prisoners, the hawks, one by one, until one bird was introduced which mastered and consumed him in his turn.

THE AUSTRALIAN SHELDRAKE.

I see that the Honourable Rose Hubbard, who is preparing a new edition of her valuable work on ornamental waterfowl, is asking about rare waterfowl which have been imported of recent years, and especially about this species (*Casarca tadornoides*). A few years ago a very large importation—I heard about 100 pairs—of this hitherto rare duck arrived, and many must have got into private hands. As many as five pairs were on view together on the Regent's Park water, and the Zoo had several pairs as well. None bred, so far as I know, though I believe eggs were got at the Zoo. A drawing of an escaped specimen was once submitted to me for identification, and no doubt the species was disseminated far and wide among waterfowl amateurs. This class of aviculturists, however, very seldom put their experiences on record, so that it is very hard to get information about waterfowl.

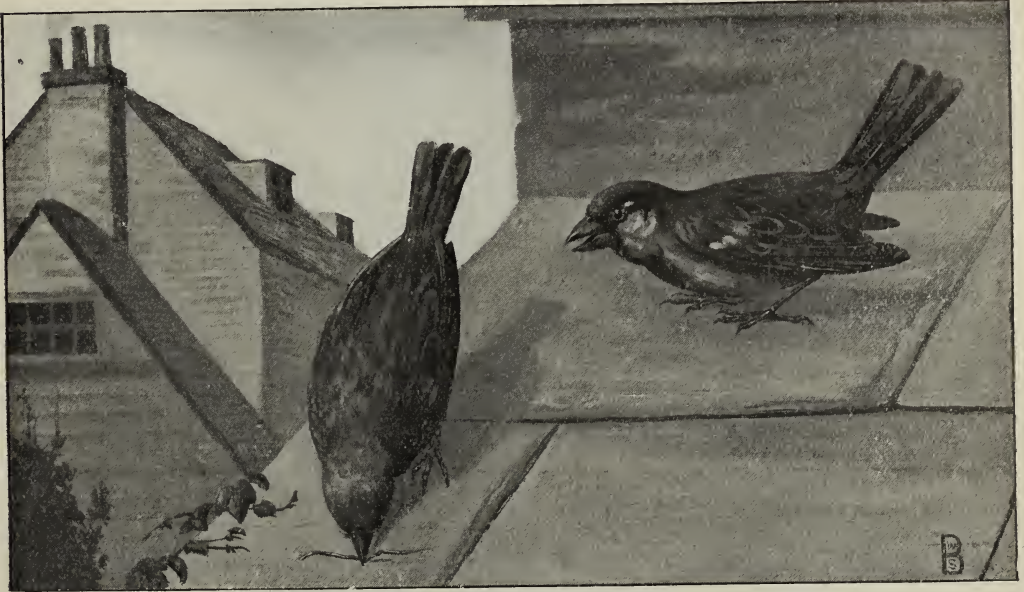
A PLEA FOR THE PEKIN.

The Rev. H. D. Astley has recently been remonstrating against the practice of importing that charming bird, the Pekin Robin (*Liothrix luteus*) wholesale, as has been done of late. There is no doubt that many of these birds come over only to perish, for they do not do well crowded together in store cages and fed on such meagre diet as crushed hemp-seed and bread-crumbs—this being the way in which they are too often treated in the trade. Aviculturists certainly ought to combine and do something to have the bird traffic regulated, as the abuses that exist at present give every excuse for outcries against it. With regard to the Pekin, although the recent attempts to establish it in the London parks seems to have had no result—at any rate, the birds were not seen after autumn—I hear that in the Thames Valley some birds liberated last year have continued to haunt the locality where they were released, and are, or recently were, still there.

THE PERFECT PEACOCK.

Most people would say there are two pre-eminent drawbacks to the common Peacock as an ornamental bird—the atrocious noise he makes and the dowdiness of his mate, who although refined and ladylike in her demeanour, is not worth her keep as an object of beauty. Neither of these drawbacks exists in the Javan bird, in which the hen is as beautiful as the cock, except that she has not the train; and the cock's call is a comparatively suppressed cry in several syllables, very unlike the weird cat-call of the ordinary Peacock, and not at all obtrusive. It must be admitted, however, that the Javan Peacock's bronze-green neck does not compare favourably with the refulgent blue of our old friend, and his temper is terribly bad during the breeding season, when he will make most treacherous and unpleasant attacks on people.

Some Popular Favourites in Courting Poses.



The Sparrow.



The Starling.

The Sparrow-Hawk.

(*Accipiter Nisus.*)

By D. STEWARD.

The Sparrow-Hawk is a fairly common inhabitant of the British Islands, and is generally distributed throughout Europe and North-East Africa.

It has unfortunately earned a bad name for itself, for it undoubtedly causes much destruction—particularly during the breeding season—amongst game and poultry, and at all times it is an indefatigable pursuer and ruthless destroyer of all sorts of small birds.

Its nest, which is large, straggling and untidy, is constructed of sticks and lined with twigs, and is usually placed high up in the tallest tree it can find; but it sometimes overhauls and renovates an old nest of Wood-Pigeon or Crow, and this it uses year after year.

The number of eggs is from four to six, and they are pale bluish-white blotched with reddish-brown, principally at the large end.

An Uncertain Character.

Under domestication the natural pugnacity of the bird will sometimes be wholly absent, and it will not even take the trouble to defend itself or its food against its enemies, to say nothing of attacking them; in other words it becomes "soft," as "doggy" people say, and can be kept with birds that in its wild state would be its natural prey, without any fear of its doing them harm.

On the other hand, it often retains many of its wild and cruel instincts, and, while tame and tractable enough with its owner, it is apt to become a perfect little tyrant where other people and small pets are concerned.

One that belonged to a gentleman used to be kept in the stable yard, and its chief delight was to lie in wait for people passing through, and then with a hiss and outspread wings it would dart viciously at their feet, which made timid persons afraid to venture near the yard when it was about.

Like Master, Like Bird.

No one was immune from this undesirable attention save its owner, who used to carry it about perched on his finger, and was very fond of it.

Occasionally a certain visitor would tease it by cornering it and holding out his foot towards it, when it would sit up on its tail with its back against the wall and its feet and claws stretched out ready for action, while it hissed in what it probably thought was a terrifying manner.

Now, its owner was not a man of nice and genial disposition, and in this there existed a sort of affinity between himself and the Hawk; for it is a curious fact that pets often partake of the characteristics of their owners, while the

matter of like seeking like seems more marked between human beings and the lower brute world than even between one man and another.

I could give many illustrations of this, only the limits of this article will hardly admit of my doing so.

An Unfortunate Family.

So to return. We set up some Sparrow-Hawks of our own some years ago, but were not happy in them. We obtained them young, but they never had time to quite get over their wildness, nor to develop any characteristics beyond that of sitting up on their tails when food that they did not want was pressed upon them. The rats and a weasel—that always eluded observation and could never be captured—eventually got to them in their outdoor aviary and killed them, other birds in the same aviary escaping, curiously enough. To remedy this we placed two Hawks in an aviary with a tawny Owl for a night, but this proved to be out of the frying-pan into the fire, for the feathered cat cruelly murdered one and made a hearty meal of it; and the next morning we found one very scared-looking Hawk huddled up in a far corner, and the murderer blinking contentedly in gorged satisfaction, surrounded with a few feathers, a beak and a pair of yellow legs.

Sex Differences.

The female Sparrow-Hawk differs considerably from the male in size, being 15.5 inches in length, while the male is only 13 inches. The former may also be distinguished from its mate by the bars on its breast being of a lighter shade—light fawn-colour, instead of reddish-brown, as in the male.

Hardiness and the Reverse.

In view of the contemplated liberation of some of the beautiful Australian Crested Doves (*Ocyphaps lophotes*) in the Zoo grounds, it is worth noting that one of these birds has wintered in the Eastern Aviary there, roosting out under the wire netting in the outside flight all the time. This is certainly pretty good testimony to the hardiness of some individuals at all events. In the same aviary, however, there is a living example of how birds of the same species may differ in this quality. At the time of writing one may now see there the Society's male specimen of the Green or Javanese Peafowl (*Pavo muticus*) in good health and very ready to display his train. Yet this bird has had to be put into this aviary because he could not stand the cold out in the paddocks in the North Bank, where his mate has lived quite happily. The male bird showed his dislike of the climate by sitting in a tree and moping, going off his feed, but regained his appetite and spirits on being put into the artificially-warmed aviary.



A Winter Tragedy.

The Sparrow-hawk, here depicted preying on a Blue Tit, has fine opportunities in winter owing to the scanty cover then afforded by the leafless vegetation. Hence it is, no doubt, that so many birds which winter in the north affect evergreen trees.

Humming-Birds.

By MISS DYDDGU HAMILTON.

As long ago as 1824, 200 species of Humming-birds were already known. At the present time over 500 species are counted, and in all probability the list is not nearly complete.

They belong exclusively to the New World, and are, in the main, confined between the Tropics. Both in structure and in habits all the members of the family show a wonderful uniformity, while, on the other hand, there is an excessive variation in their plumage, both as to colour and ornament.

Family Features.

Cuvier places the *Trochilidae* (Humming-birds) between the Creepers (including the Sun-birds) and the Hoopoes. No intermediate forms connect them with any other group. Their wings have the quill-feathers graduated so as to give the appearance of a sickle. The first quill is longest, and so on in succession, as in our Swifts, and in all birds of strong flight. Their legs are very short, so that it is impossible for them to walk on the ground, and they always feed upon the wing, though occasionally they may be seen, when perched upon a leafless twig, probing with their beak the flowers within their reach.

When a Humming-bird has settled on a branch, there he remains, quiet and motionless, looking as stiff and artificial as our own Kingfisher. They are comparatively sedentary birds, though they can fly uncommonly fast and well, and they never loiter on the wing. Their flight is unlike that of all other birds. They dart to and fro and skip about in the capricious manner of insects, buzzing up the tree trunks and only stopping at intervals to pick off some minute morsel of food. Their fare consists of small spiders and insects, and honey from the flowers.

More Beauty than Brains.

Mentally they do not rank high. Their actions, though quick and precise, are monotonous and mechanical. Their instinct of self-preservation is in an even more simple condition than that of an insect, who will at least struggle to release itself from the hand of a captor, whereas the Humming-bird, after being chased about and caught, will almost immediately feed on any sweet offered to it, without betraying either fear or resentment.

On the other hand, their beauty is beyond words. The South American Indians call them "living sunbeams"; but even such a title as that gives no idea of their resplendent rainbow-hues, glittering and flashing like jewels and gold in the fairy palace of Aladdin. Among such a vast

variety of brilliant beauty, who shall decide which excels! My own favourites are the little scarlet-throated *Selasphorus alleni* from California, and the glorious purple and emerald *Panoplitus jardi* from Ecuador. But one might as well take upon oneself to select which should be first favourite among the flowers, as to lay down the law about these living blossoms.

Fairies and Fighters.

They are seen at their loveliest when darting swiftly about the honeyed flowers, or hovering motionless on misty wings, whose exceedingly rapid vibrations make them all but invisible, "a sapphire stilled upon air"—for no wings are seen. The humming sound from which the bird derives its name is caused by this quick vibration of its wings. These tiny birds are as brave as they are beautiful, attacking even man himself in defence of their nest and young. Humboldt tells us that the Mexicans say that Toyamiqui, the wife of the God of War, led the souls of those warriors who had died fighting for the gods into the mansion of the Sun, and there changed them into Humming-birds. It may be that the little creatures are so daring because they have practically no enemies, their exceedingly swift and erratic flight making it almost impossible for any bird or beast of prey to catch them. Therefore, in spite of being slow breeders, they are extremely numerous.

Liliputian Homes.

Their nests are made of spiders' web, vegetable down, lichen and fine grass compactly felted together. Some nests are small, deep and cup-shaped; others, like those of the *Phaethornis* (or forest species), are long, purse-shaped nests, built on the inner side of the tips of palm fronds. The eggs are seldom more than two, small, white, with ends of equal size. Incubation lasts a fortnight, and the young fly when they are three weeks old. When first hatched they are naked and blind. The plumage differs in the male and female, but the young males resemble the female, and any additional feather ornaments which adorn the males of certain species do not appear until towards the middle of the second year.

Humming-birds in Aviculture.

Humming-birds are very easily tamed, and are fairly easy to keep in captivity when their wants are understood. The great trouble is getting them alive to England at all, let alone bringing them over in good condition. But they have been brought over on more than one occasion,

and have lived for several months even in our deplorable climate. What has been done once can be done again, and next time let us hope that it may be with better success.

Mr. Webber's is the best known description of captive Humming-birds, but he had the great advantage of keeping his pets in their native air. His account is full of interest, and should be read by any intending keeper of these tiny birds. Mr. Webber's Ruby-throat "played 'possum" when first caught, but drank syrup as soon as this was offered, and plumed itself while perched upon its captor's finger. After three weeks it sickened, but having been let fly out of doors for a day it returned in good health to its cage, hung outside in a lilac-bush.

The Spider Cure.

Later on Mr. Webber found the nest of the Green Humming-bird with three eggs in it. He left home for three weeks, at the end of which time he found two fully-fledged young in the nest. These he took home, and they fed at once, without hesitation, on the syrup. They seemed to have been taught to consider it ungenteel to look surprised or startled at anything. After two or three weeks these young Hummers sickened, like the Ruby-throat, and all three were let out in the garden. Then they were seen to eat spiders, picking them from the centre of the web and swallowing them whole. They were

not observed to eat any other insect, though different kinds were offered.

Subsequently Mr. Webber found the nest of a Ruby-throat. In it also there were three eggs, but only two birds hatched. He observed that when the hen was coming into the nest she flew perpendicularly down from high up in the air, apparently to baffle pursuit by enemies.

The Attraction of Red.

Humming-birds are greatly attracted by orange-blossom, and by the red flowers of the Bois Immortel. A friend, whose early home was in California, tells me that she used often to read in the garden before breakfast, and that then, if the cover of her book happened to be red, a Humming-bird was sure to come and perch upon it.

They are fond of water, and bathe from a twig overhanging a stream, dipping their bodies and fluttering their wings in order to get well sprinkled.

They will dart after insects on the wing, and indeed, they themselves fly so much like insects that the Indians believe that Humming-birds and moths are transmutable one into the other. At any rate, the resemblance between the two is so extraordinary that even experienced naturalists have shot the moth, mistaking it for a Humming-bird.

Two Favourite Little Finches.

From Photographs by Mr. E. O. Page.



The Orange-Cheeked Waxbill.



The Crimson-Winged Finch.

A History of Birds.

By W. P. PYCRAFT, A.L.S., F.Z.S., Etc.

(Continued from p. 112).

HOW FEATHERS GROW.

As touching the growth of feathers, but little can be profitably said here. The earliest traces of feathers must be sought for in the embryo, where the first rudiments of the coming nestling down appear in the form of tiny bead-like bodies, which soon sink down into a pit. Next an outer protecting sheath is developed, and within this the mass of pulp which it contains proceeds to form first the main axis, and next the barbs and barbules. What will prove the tip of the feather is the first to be formed, and as this forces its way up the lower parts are added, till at hatching time the whole of the down-feather is completed.

At the base of this down-feather lies the germ of the contour-feather which is to follow. As this grows the down-feather is thrust out upon the tip of the new contour-feather, and here it may be attached for a very considerable time, as in the case of young Herons, for example. On its first appearance, as everybody knows, the new feather is ensheathed in a thin, delicate blue wrapper, the first-formed portion of the vane bursting its way through while the lowermost feather is yet forming. This lower portion is filled with a mass of jelly-like pulp, richly supplied with blood. After the feather has completed its growth, if the barrel or "quill" of the feather be cut with a sharp knife, the supply cases or "cells" which held the pulp will be found lying one above another in the centre of the quill.

THE PROCESS OF MOULTING.

In most birds the feathers are renewed at least once annually by the process known as moulting—a critical time in a bird's life. When there is lack of suitable nourishment, or when the bird is low in vigour at the moulting season, the feathers become curiously indented with fine grooves known as "hunger-marks."

The annual moult takes place generally after the breeding-season; but some birds moult again in the spring, when a new and more resplendent livery is put on, as in the case of many of the Plover tribe. But the quills in such cases are not renewed. In some birds, as in the drake of the common Wild Duck, a dull livery, resembling that of his mate, is put on—the so-called "Eclipse" dress, and this is worn for some weeks. By the middle of August the new and characteristic "breeding" dress is well in evidence

and by October is completed. This "Eclipse" dress, then, answers to the dull dress put on after the breeding season by the Plovers, and is simply moulted again in a month or two instead of being worn till the following spring.

HOW COLOUR-CHANGE IS EFFECTED.

While some birds put on a new and brightly-coloured dress in the spring, others brighten up their plumage quite as conspicuously by simply shedding the tips of the feathers assumed at the autumn moult. No better instance of this can be found than that of the Linnet, which, by this shedding process, gains the beautiful, rich brown back, and rose-pink breast, that make these birds so much prized. From some as yet unexplained reason, however, captive birds, if taken in July, before the autumn moult, develop yellow in the place of red, which colour is never regained: if taken in the autumn, the red breast appears in the following spring, but never again. The beautiful plumage of the Starling is similarly attained by this method of shedding the outer edges of the feathers, and the Chaffinch gains its blue head in the spring by this same process.

Whether birds can gain an access of colour to the feathers without a moult is still a disputed point. Some hold that there can be no doubt about the matter, while others, apparently as well qualified to speak on the subject, deny the possibility of such a change, absolutely. Perhaps some of my readers may be able to throw some light on this subject.

COLOUR-FEEDING AMONG SAVAGES.

That the colour of feathers can be influenced by feeding is a fact too well known to the readers of THE BIRD WORLD to need further comment, but it may be interesting to remark that this fact is well known to the savage people of Brazil, who feed a species of green Parrot on the fat of Siluroid fishes, the feathers as a consequence becoming beautifully variegated with red and yellow. Another race of South Americans change the colours of Parrots by plucking out such feathers as they propose shall be altered, and inoculating the spot from which the feather was taken with the milky juice obtained from certain glands of a small toad. The new feathers now appear of a brilliant yellow colour, and on being plucked out, it is said, grow again of the same colour without any fresh inoculation.

Finally we have a few remarks to make on the covering of the beak and feet. The jaws of a bird, as we have already remarked, no longer bear teeth, but are ensheathed in horny cases. In many species, as in the Petrels, for example, the beak-sheaths, instead of being entire, one for the upper and one for the lower jaw, are made up of a number of separate pieces. While in the Puffin, and one of the Pelicans, ornamental plates are developed during the breeding-season and shed immediately after. In the Pelican this plate is square in shape and borne on the ridge of the beak near its middle; in the Puffin it is triangular, and is attached to the base of the beak at each side.

The legs, as a rule, are covered, as in the reptile, in horny scales; but in some birds, as in Grouse, and Sand-Grouse, and the Golden Eagle, and many Owls, the shank of the legs, and often the toes also are covered by long feathers not unlike long, silky hairs, and quite different in character from the quill-like feather on the legs of domesticated races of Pigeons and Fowls. In some birds a delicate skin takes the place of scales.

The claws of birds vary greatly in shape, according to whether they play any part in the capture of the food. Thus they may attain a relatively enormous size in Birds of Prey, where the claw of the hind toe is especially large; here the feet are used to hold living prey securely. Some species, indeed, as the Gos-hawk, for instance, kill their victims by means of the feet and claws. In the Jaçanás, birds of the Plover tribe, the claws attain an enormous length, forming long, pointed rods, which, with their tremendously long toes serve to enable them to

walk in the delicate floating weeds of the rivers which these birds haunt. In some other birds, as for example in the Cassowary, the claws may be used as a weapon of offence. And the inner claw is of great size and strength, and is capable of inflicting a very dangerous wound.

CHANGEABLE CLAWS.

In many of the Grouse tribe the claws are shed each spring; though in some, as in the Black Game, the shedding is confined to the ragged fringe along the inner side of the claws. This fringe, by-the-bye, recalls the fact that the middle claw in many birds, as the Barn Owl, Nightjar, and Herons, for instance, has a curious series of little teeth running along its outer edge, but so far no one has been able to tender any suggestion as to what use it may serve.

WING AND LEG-SPURS.

Finally, we must find space for a brief reference to the formidable weapons which many birds possess in the shape of spurs. These are generally confined to the legs, and may be represented by a pair only, as in the Game-cock, or by several, as in the Peacock-Pheasant. But beside these a few birds have similar and equally powerful armature in the wings. In some, as in the "Screamers" (*Palamedea* and *Chauna*), two spurs are developed, one at each end of the fused metacarpal bones—the bones which form the "palm" of the hand; in all other birds but one spur is developed, and this may spring from one of the wrist bones as in the Spur-winged Goose, or from the base of the thumb, as in the Jaçanás.

A Rare-Feathered Chiff-Chaff.

The present photograph is a likeness of Mr. J. Jones's well-known albino chiff-chaff, one of the rarest freak-feathered birds ever exhibited. It won first and special Dulwich and Peckham, first at Nottingham, third at Cardiff and Cannock. The bird is shown as it appeared in its show-cage; its plumage is not pure white, but of a faint primrose hue. The chiff-chaff is of particular interest at this time of year as being the earliest of our spring migrants. The characteristic double note, from which its name is derived, may be often heard by the middle of March.



CHAPTER III.

FLIGHT AND ITS MECHANISM.

While, in the possession of feathers, birds occupy an absolutely unique position in the animal kingdom, they are not to be so distinguished in the matter of their flight, for many creatures far below them in the scale of life are no mean performers in this most enviable form of locomotion; while the Bats, which belong to the man's own class—the Mammalia—on the other side of the scale are also adepts in the art. In the manner of their flight, at any rate, the birds are peculiar, though, for the matter of that, so also, it may be urged, are the Butterflies and the Bats. But, as we shall show, this is not altogether true.

In the study of "the way of the bird in the air" so many factors have to be taken into consideration that it is difficult to know where to begin, and even then, having made a beginning, it is by no means easy to make a plain, straightforward tale of it. Technicalities will seem to thrust themselves in upon our argument, with many officious promises of making things clearer; but they shall be severely repressed!

Though birds are essentially flying animals, and though to attain this power they have become profoundly modified as to their bodily shape, they have yet, in some respects, not gone so far as, say, the Bats, for the latter have almost completely sacrificed the power of terrestrial locomotion, while the birds have, with some few exceptions, preserved this, or, at any rate, they have preserved the hind-limbs as "going concerns" of some kind. With this preamble, let us come to closer terms with our subject. And this we can do better, surely, by a study of the bony framework of the body, in its relation to flight, than by any other way.

ADAPTATION OF THE BODY FOR FLIGHT.

Indirectly, of course, the whole body is moulded to bring it into harmony with the requirements of aerial locomotion. The long neck, passing insensibly into the body, which tapers again into the tail; the beautifully smooth, rounded surface formed by the close-fitting overlapping feathers, are very important adaptations to this end, offering the least possible resistance to the air; while the large mass of the breast muscles attached to the under surface of the body—which during flight is, as it were, slung between the wings—contribute towards the right ordering of that all-important matter—gravity. In many birds special means have been adopted to secure extreme rigidity, as may be seen by the fact that the separate vertebræ of the back have become welded together to form a stiff, unyielding beam, though in many fliers, as the Parrots, the "Perching-birds," and Gulls, for example, these vertebræ retain their primitive independence. But it is not till we come to examine the bones of the shoulder-girdle and sternum and the wings that we find the really obvious adapta-

tions, or modifications, of the skeleton which flight has brought about.

THE BREAST-BONE AND ADJACENT PARTS.

I will not weary my readers by a long and probably wearisome comparison between the shoulder-girdle and sternum and fore-limbs of the Reptile and those of the bird, by way of showing how the one became changed into the other, because such a comparison could not possibly carry conviction except to those who have made a life study of the subject. Let us rather examine the facts as they appear in the bird. By the shoulder-girdle, we may remark, is meant those bones which make up the shoulder-blade, or

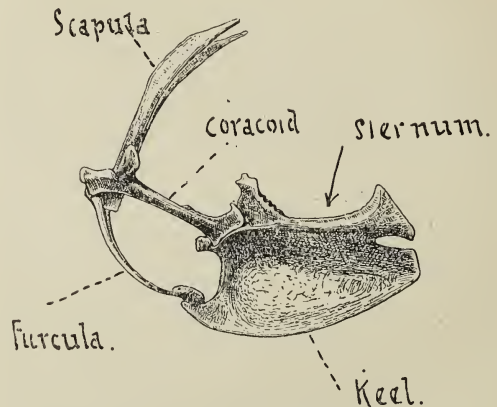


Fig. 1.—The Shoulder-girdle and Breast-bone of a bird.

scapula, the long, straight pillars known as the "coracoids," and the furcula or "merry-thought." These form a sort of cage fixed on to the front of the sternum, or breast-bone. This bears, as everybody knows, a rough resemblance to the hull of a ship, but with an extremely deep keel. A reference to the figure here should make this clear. The deep keel and the broad, flat plate of the breast-bone serve for the attachment of the breast muscles, which in the bird are of enormous size, equalling or exceeding in weight all the other muscles of the body.

THE PECTORAL MUSCLES.

These muscles, which constitute the large mass of flesh familiar to everyone as the "breast-meat" of a bird as served up at table, are arranged in two layers. The outermost runs forward, to be inserted into a shelf of bone which projects from the upper surface of the humerus, or upper arm, while the lower runs beneath it, along the coracoid, and finally passing into a round tendon, runs through a pulley formed by the meeting of the coracoid, blade-bone, and merry-thought and into the head of the humerus. These two muscles play the most important part in raising the body and keeping it in motion, for these by their contrac-

tion bring about the downward wing-beat. About the other muscles which aid in this work, and those which raise the wings at the end of the stroke, we need not worry here.

BIRDS WITHOUT KEELED BREAST-BONES.

How intimately the keel is associated with flight may be seen by an examination of birds which fly but little. In them the keel is always shallow, while in those which have lost the power of flight altogether it is reduced to a mere ridge of bone, as in the Owl Parrot (*Stringops*), or has vanished altogether, as in the flightless Ostrich tribe.

STRUCTURE OF THE WING.

The wing itself is no less profoundly modi-

fied, as we pointed out in an earlier chapter. Suffice it to say here that of the original five fingers but three remain. Of these the thumb and third finger are reduced, and little more than stumps, while the second finger has been elongated to form a long, rigid rod, strengthened at its base by that portion of the third finger which in ourselves contributes to form the "palm" of the hand. In the bird's palm there are but two bones, forming the base of the second and third fingers respectively. (See Fig. 2.)

The bird's wing folds in a peculiar manner, so as to form a more or less Z-shaped rod, the humerus or upper arm forming the top of the Z, the fore-arm the down-stroke, and the hand the base of the Z.

(To be continued.)

Skeleton and Quills of the Wing.

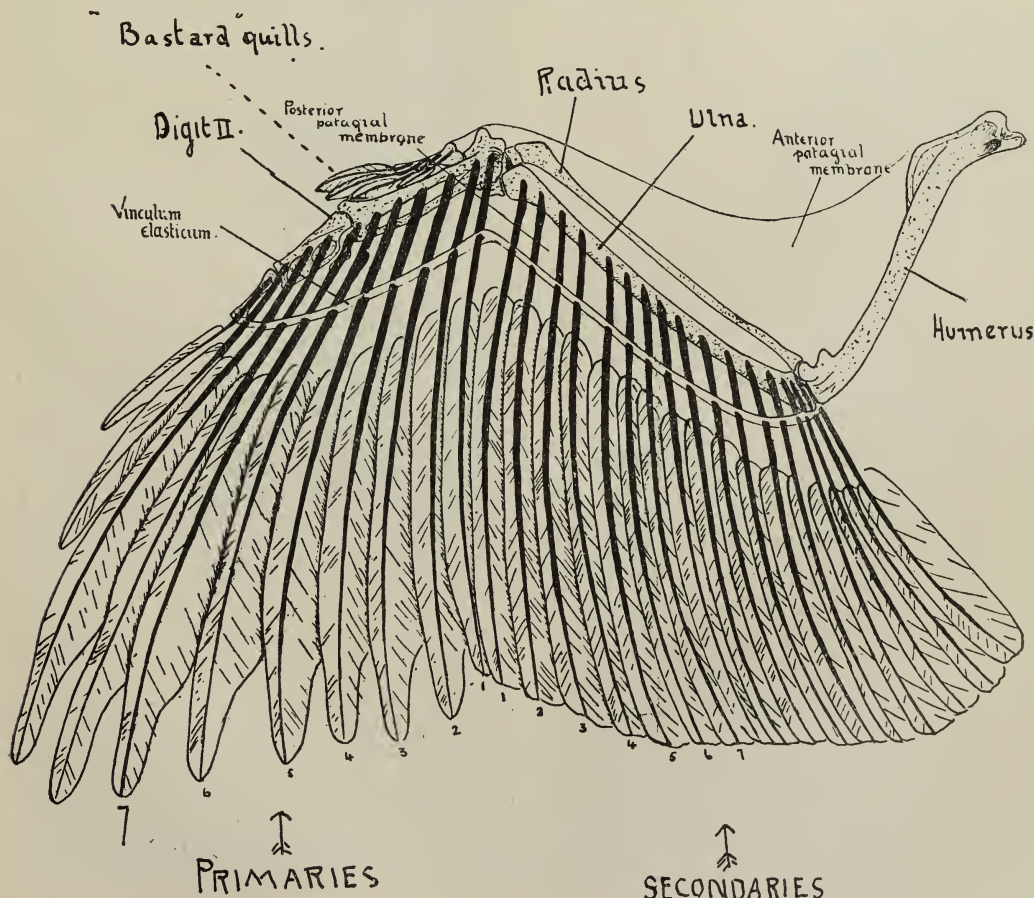


Fig. 2.—The Wing of a bird, showing the skeleton and flight-feathers or quills attached thereto. The anterior and posterior patagial membranes are folds of skin which help to increase the surface of the wing; the posterior membrane serves more especially to strengthen the hold of the quills. The vinculum elasticum is a band of tendon running along the edge of this hinder or posterior fold. It is elastic, and serves to keep the quills in position during flight. The reduced skeleton of the end of the third finger supports, and is concealed by, the seventh primary.

The Egg Harvest at Bempton.

Illustrated by Photographs by Messrs. CLARKE and HYDE.

Between Filey and Flamboro' Head, on the Yorkshire coast, the sea is fronted by a six-mile stretch of precipitous cliffs, three to four hundred feet in height, and nowhere is it possible to ascend or descend these cliffs without the aid of a rope.

Year after year vast flocks of sea birds make their temporary home upon the rocks during the breeding season. It is the favoured resort of the Guillemot, the Razorbill, and the Puffin; in fact, it is only here and on the Farne Islands that the Puffin is to be found upon the east coast.

The Puffin at Home.

Quaint little creatures are these Puffins, with their great, brightly-coloured beaks, solemn expression, and awkward appearance on land. Born fighters, they are ever ready to use their bills in defence of their nests, and woe betide the incautious hand that intrudes upon the privacy of a Puffin burrow while the tenant is at home.

The Puffin, or Sea-Parrot, as it is sometimes called, lays but one egg in a hole or burrow in one of the steep, grass-covered slopes that are



Descending the cliff; the climber is in many places in mid-air.



One of the eggers, 400 feet down below the surface of the cliffs, on a ledge with its natural tenants, the young chicks.

found at intervals along the cliff face. This egg is at first whitish in colour, marked with pale lilac, but the birds, coming in wet from the sea into the burrow, soon cause it to get stained to a mud-brown.

It is, however, the eggs of the Guillemot, laid upon every available ledge and in every crevice, that furnish the sturdy Yorkshire cliff-climbers with the major portion of their annual harvest.

How the Egg Harvest is Gathered.

The accompanying photographs show Mr. Wilkinson, of Bempton, who has had a life-

long experience on the cliffs, and is known as "King of the Climbers," at work.

The egg harvesters work in gangs of four, one being lowered over the cliff and the other three remaining to pull him up again. Early in the year the gangs, each of which has a sole right to certain parts of the cliffs, decide at what point the descents are to be made during the forthcoming season, and, having settled this important point, a descent is made at each at least twice every week, however bad the weather may be. As the eggs are gathered for eating, this is essential, to ensure their being fresh. Indiscriminate gathering would, obviously, be impossible. This is a point worth noting, as many people, hearing that cartloads of eggs are taken daily during the season, jump to the conclusion that wholesale and reckless pillage is being perpetrated. This is not really so, as many portions of the cliff face are left absolutely unvisited. Moreover, the fishermen complain that since man has destroyed the birds of the raptorial family that formerly kept the sea birds in check, the latter have increased prodigiously, to the detriment of the fishing industry.

Layers of Fancy Eggs.

The eggs of the Guillemot vary in colour and markings more than those of any other British bird, and "sport" or freak eggs are always in great demand. Mr. Wilkinson informed the

writer that he had taken a similarly marked "sport egg" from identically the same spot upon the cliffs for twenty years in succession. This fact throws an interesting sidelight upon the age attained by sea-birds. Though it was impossible to actually identify the parent, yet it would appear highly probable that those particular eggs were all laid by the same bird, or possibly her offspring.

Precarious Breeding.

The Guillemot makes not the slightest pretence at nest-building, simply laying her single egg upon any ledge that affords a few inches of flat surface; and when this is taken by the climber she lays another, and often a third. When sitting the bird simply squats upon the ledge, holding her pear-shaped egg between her feet, with the tapered end pointing outwards. In the event of the parent being suddenly disturbed, the peculiar formation of the egg itself tends to cause it to revolve upon its own axis or roll round in a short circle, instead of rolling straight and falling off the ledge, as an elliptical egg would be liable to do. In fact, the quantity of eggs that actually fall from the cliffs is remarkably small, considering the vast multitudes that are deposited in such seemingly precarious situations.

Nestlings, however, strew the rocks beneath in hundreds; but should a young bird fall from its home to a point lower down the cliff and



After the Climbs.

This Photograph represents the way in which the takings are divided. The eggs are placed in a heap—"pooled," in fact—and the men gather round it and draw from it in turn.

survive, the parents will invariably find and feed it again, flying seawards, and returning every ten minutes or so throughout the day with a fish.

When one bears in mind the millions of birds that annually visit this great east coast breeding ground and the number of small fish they devour, the complaint of the fishermen concerning the destruction of fish life seems well founded.

Sea birds, however, are by no means the only tenants of the Bempton Cliffs. Jackdaws innumerable circle round the pinnacles, and Crows steal any eggs they can find unguarded. Near here, too, at one time, the Great Bustard flourished, and it is on record that in the early part of last century they were to be seen in great numbers, though they have long since disappeared entirely.

Two Victims of Fashion.

The craze for wearing birds' feathers in hats still continues, and it is unfortunately some of the most beautiful and remarkable birds in the world which are affected by it, and this is the



Photo copyright by

W. S. Berridge, F.Z.S.

The Large Egret.

This is one of the most widely distributed of birds, being found almost all over the world, though different specific names are assigned to the local races. It seems, however, to be nowhere an abundant species.

more distressing, as all the feathers that any reasonable being could want to wear can be well obtained from birds killed for food, such as poultry and pheasants, to say nothing of ostrich feathers, now obtained from domesticated birds in farms.

The two beautiful birds illustrated on this page are frequent victims to the "plumassier," the lovely fan-like crest of the Crowned Pigeon being too often seen on a lady's hat, while the egret is one of the White Herons which furnish the so-called "osprey" plumes of the feather trade. These plumes are only worn in the breeding season, when they form a beautiful filmy mantle on the back of both sexes; the bird



Photo copyright by

W. S. Berridge, F.Z.S.

The Crowned Pigeon.

This magnificent bird is the largest of known pigeons, equalling a small hen turkey in size. It is chiefly a ground bird and flies comparatively little, though roosting and building in trees.

in the picture is not in nuptial plumage, and so does not show them. The killing of the birds to obtain these plumes naturally leads to the starvation of the young, which perish wholesale in their nests, and hence the destruction inflicted is very great, to say nothing of the great cruelty involved. The Crowned Pigeon is also a bird which must suffer very severely by the raids of the feather-hunters, for it is not by any means prolific, only laying one egg, instead of two like most pigeons, and it is, besides, an unwary bird and not at all difficult to shoot.

Unless some international legislation can be managed to protect birds such as these, posterity will find that we have allowed some of the finest species of birds in the world to be exterminated for a very trifling cause.



The Red-backed Shrike.

A well-known summer migrant.

Our Tiniest Canaries.

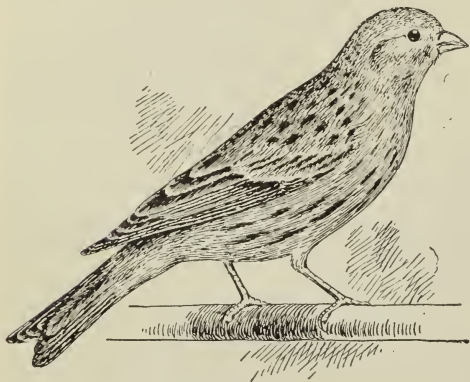


The Lizard and the Border Fancy Canaries are the smallest members of the British Canary Family. They are alike only in their diminutive bulk, however. The Lizard is distinguished by the curious reptilian-like spangling of its plumage; whereas the Border Fancy is of the usual colour associated with the name Canary.

The Breeding of Norwich Canaries.

By J. C. WILMOT.

In bringing the subject of Canary breeding before the readers of the *BIRD WORLD*, I have to say that the subject is so many-sided that the space at my disposal will only permit me to take a brief notice of some of the most important points—this with a view, not of enlightening the old fanciers, who are already familiar with the subject, but, if possible, of saying a few words which may be helpful to any novices among them who may be aspiring to breed, at some future time, a Palace winner. First of all,



The Wild Canary.

Simply a green and a bad green at that.

canary, from which most, if not all, the different canary, from which most, if not all, the different varieties derive their origin.

The Ancestor and its Descendants.

You will see that the drawing which is here reproduced has very much the appearance of a Linnet, although the ground or body-colour is green; this bird was brought from St. Helena to London, and was exhibited in the Any Other Variety class at the Crystal Palace show in 1875. Such birds are to be found in a wild state in South Africa, in several of the islands in the Atlantic Ocean, and also in the Canary Islands.

The most popular breeds of the present day are the Norwich, Yorkshire, Cinnamon, Scotch Fancy, Belgians, and Lizards, and in Scotland may be added the Border Fancy. I shall here confine my remarks to the first as the Norwich Canary is undoubtedly the most popular variety of all, and if there are any of my readers who intend to embark in the fancy, I should certainly advise them to commence with

this, as there is generally a liberal classification for it at most shows, and there is not much difficulty in disposing of one's surplus stock, especially if the birds are of good quality.

You have in the Norwich Canary a bird of excellent shape, not high-shouldered or hunch-backed like some other varieties I might mention, but a bird of lovely symmetry, of rich colour, and beautiful, silky texture of feather. They are also hardy birds compared with other varieties, and as a rule are excellent breeders and feeders.

Management of Breeding Stock.

With regard to breeding, I prefer to run one cock with two hens, and take away the cock from each hen after they have laid their third or fourth egg, as I find the hen sits better by herself. I generally put the cock bird back when the young are a few days old, as one may probably require his assistance in feeding when the hen goes again to nest, and a cock bird that looks well after the young is invaluable.

It is generally considered advisable to remove the first three as they are laid, putting them back again on the evening of the third day, but I am not quite satisfied that this is the wisest plan. Another thing I should recommend to the novice is to meddle with the hen during incubation as little as possible; once, or at the most, twice a day is sufficient just to peep and see that all is right, and this is best done, whenever possible, when the hen is off the nest feeding. It is also advisable to keep a record of the date when the hen is set, so that you may know when to expect the eggs to hatch, and on the morning of the fourteenth day, if all is well, you may be rewarded by seeing one or more little gaping red mouths, ready for their breakfast.

Rearing the Young.

Much has been written against the use of hard-boiled egg, but the general opinion is that there is nothing to equal it for young birds. Boil the egg for about 15 minutes, and for the first few days give only the yolk mixed with an equal quantity of either biscuit or bread-crumbs; after that you can, if you prefer, grind up the white with the yolk and add biscuit or bread-crumbs as heretofore, but remember that the food must be sweet and fresh. Let the hen also have at this time a spoonful of hempseed daily, as this is always relished by them, and the operation of cracking the hemp keeps the hen off the young for a short time, and helps to prevent sweating the young. Also let the hen have a bath daily after the young are four or five days

old. Another thing you will require is green food; if you have a bit of garden, sow some lettuce-seed early in March, and another lot in April; you will then have green food all through the summer. Failing this, the young leaves of dandelion will do, or watercress; but on no account give the old leaves from the dandelion, as they are much too rank for young birds. When the young are about fourteen days old it may be necessary to remove them, as very often the hen bird commences to pluck them for the purpose of lining her new nest.

The best plan is to have a double breeding-cage, with a wire partition at the bottom, through which the old birds will feed them; failing that, you can place the young in a nursery-cage and hang it on the front over the open door. Continue the egg-food to the youngsters when they are able to feed themselves, and give them a little crushed hemp and canary-seed daily.

Colour-feeding.

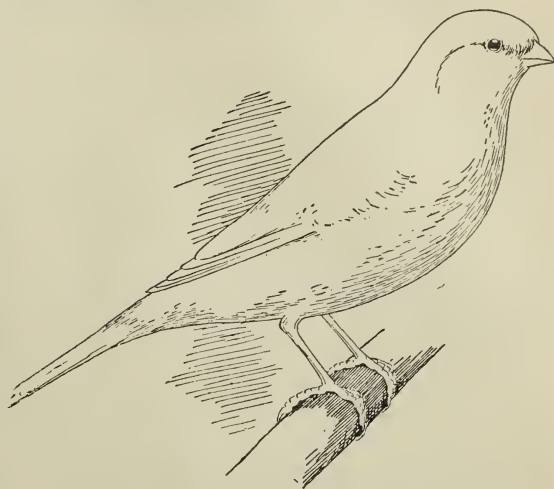
When they are six weeks old, if you wish to colour them, do not use "Judson's Dyes," or more likely than not you will see a disqualified card ornamenting your show-cage; but you may paint them inside as much as you please. This you will do by means of pepper, tasteless or pungent, which must be given in small quantities at first, mixing it well with the egg food and increasing the quantity *ad libitum*. About this time do not forget the bath, as it enables the young birds to cast their feathers freely, and helps to put a desired sheen upon their plumage.

Points of Perfection.

One of the principal points in a typical Norwich is *type*; it should be a short, thick, chubby



A first-prize-winning Norwich at the Palace Show of 1874.



Modern Norwich: a noted prize-winner of the present season.

bird, the chest full and nicely rounded off, the flights short and compact, and carried close to its body; the tail also short and well closed—not at all after the style of the Fantail Pigeon—the legs short and fine in appearance and quite free from marks, finished off with a nicely-rounded head, without the slightest approach to a brow over the eyes. I am afraid that the craze for size just now is liable to lead us astray with regard to the other points I have mentioned. Personally, I much prefer a good typical small bird to a faulty big one.

And, lastly, you want colour, because at the present time 40 points out of 100 are allowed for colour. I have already referred to colour-feeding, but do not want you to run away with the idea that all you have to do is to give them plenty of pepper. That is a great mistake, because unless you have the natural colour to start with, you cannot bring it out; consequently, you must breed for colour, and the foundation for colour is found in the green blood.

I have much pleasure in illustrating the type of Norwich which existed in 1874, thirty-three years ago. This bird was a Palace winner, and I want you to compare the type of this bird with those on the splendid plate which has been given with "Cage Birds" Palace Show number, and if the novices, as well as the old hands, will just keep these birds in their mind's eye, and produce this coming season a few similar ones, all alive and ablaze with colour, it is possible that when the next national show at the Crystal Palace comes round one of my present readers may carry off the premier honours, and, if so, no one will be more pleased than your humble servant.

Two Handsome Fruit-Pigeons.

By WESLEY T. PAGE, F.Z.S., etc.

The Blue-tailed Fruit-Pigeon

(*Carpophaga concinna*).

All the species of Fruit-Pigeons are exceeding fine and handsome birds, but none of them surpass *concinna* in beauty either of plumage or form. Specimens have been taken in the Moluccas, Aru Islands, Ké, Banda, Matabello, Goram, Ké Doulan, Damma, Tannibar, and Sanghir Islands.

PLUMAGE.

The back, wings and tail, lustrous metallic green; according to light-refraction there are golden, blue and violet reflections; under tail coverts, rufous; the remainder of the plumage is a lovely bluish white; legs and feet, coral red; eye, golden yellow. Described from living specimens at our London Zoo.

HOUSING AND TREATMENT.

These fine birds would thrive in any roomy aviary to which a well-lighted shed was attached. In this they would be shut up during severe weather; they would most probably breed after they had been about a year in same and become thoroughly accustomed to their quarters and attendant. Their diet should consist largely of fruit, but they should also have access to soft food, seed and small corn. Boiled rice and chopped boiled carrot is very suitable food for such birds; care should be taken that their food is not too fattening; all corn given to them should be thoroughly soaked, as they do not naturally eat grain, living constantly in trees and feeding on berries and buds.

A CURIOUS COURTSHIP.

Their call is a hoarse and somewhat booming grunt, which both sexes utter, but that of the male is much more resonant than that of the female. The courting movements of these handsome birds are interesting and also amusing, and to us humans they are certainly very grotesque; the neck of the male is puffed out, the head lowered, and his booming *hoo-hoo-hoo* it uttered to the accompaniment of bows; this is continued for quite a little time, the notes are more rapidly uttered, and the bird jumps or dances rapidly up and down on the branch; it is more of a jump than a dance, for both feet leave the perch, and a distinct tap is audible as they come in contact with the branch again, almost similar to "beating time." The above notes were made at the Zoo.

The Imperial Nicobar Fruit-Pigeon

(*Carpophaga insularis*).

This bird is very similar to the preceding species, so much so that there is but little that need be said thereon. The back, wings and tail are metallic green, the remainder of the plumage is pale blue-grey.

This species is also represented at the Zoo, where they have nested and successfully reared one young bird. The nest was merely a collection of sticks arranged on a small wicker platform fixed among the branches in the Western Aviary.

These beautiful birds, once they are acclimatised, are not at all delicate; in fact, they can then be left out of doors all the year round providing they have a weather-tight shed attached to their aviary, to which they can retire when so disposed; the shed should be well lighted, so that they could be kept therein during very extreme weather. Feed as advised for *C. concinna*.

A pair of these birds in a roomy garden aviary disporting themselves in the sun is a sight sure to be long remembered, and it is certainly to be hoped that these exquisite birds will be more frequently imported in the future than in the past.

A Domestic Defaulter in the Rookery.



"Caw! Caw!" said Father Rook: "the eggs are all cold! Suppos she has gone off to one of those beastly meetings. I don't believe in the suffering pets, do you?"

The Common Buzzard as a Pet.

By "LICHEN GREY."

Though scarcely, perhaps, coming within the strict definition of a "cage-bird," the Buzzard will still be found to be a most interesting pet for those who have the convenience of a roomy outdoor aviary at command. For this purpose nothing is more suitable than an out-house in the garden, to which a large wire-netted enclosure can be added. The larger the enclosed space is the better, though the writer has kept a Buzzard in such an aviary which did not measure more than about ten yards by seven, in which, also, a variety of other birds were kept at different times.

A Happy Family.

In this enclosure he has had living together in perfect health and feather, and upon the best of terms with one another, a Buzzard, two Magpies, a Jay, a Hooded and a Carrion Crow, besides several Owls, and occasionally a Seagull or two. The netting was about twelve feet in height, and partly overshadowed by a willow tree, whose trunk it surrounded; and upon one side an open shed, fitted with suitable perches, afforded the birds all the shelter they required at night or during stormy weather. In fine weather they nearly all preferred to roost out of doors, the Buzzard's favourite perch being upon an outjutting stone at one corner of the shed, and here for hours together he would sit, sedately poised upon one foot, quite regardless of the noisy chatter of his more lively companions.

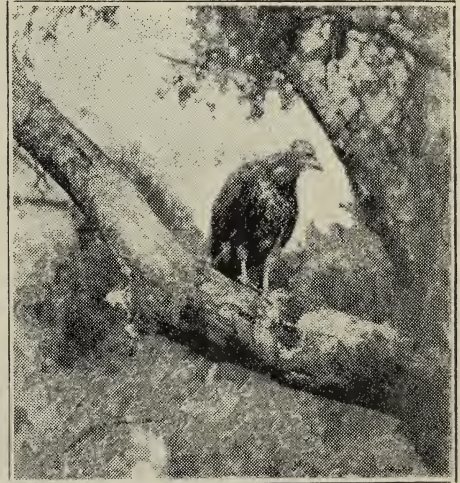
How to Feed.

The natural food of the Buzzard consists of rats, moles, and other small mammals, and in confinement he must of course be supplied with a similar diet. For this purpose any sort of flesh that is most easily procurable will do, bullock's liver being a cheap and easily obtained fare in most places, though it is better to avoid a too constant recourse to such gross substances. It is important to remember, too, that all birds of prey naturally exuviate the fur, feathers, and other indigestible portions of their food, and when in captivity a diet of liver or such like is frequently resorted to it ought to be mixed or covered with fur or feathers to supply material for the castings, which tend greatly to keep the bird in health. In the case of a Buzzard, or other similar large bird, sheep's wool will do very well for this purpose, and when this is given it is curious to notice the perfectly white pellets which will be thrown up—cylindrical bodies, nearly an inch in diameter, and resembling the fluffy heads which gunsmiths sell to screw upon the end of a cleaning rod more than anything else. Failing other food, a Buzzard will eat fish with considerable

relish, and even an occasional frog, while large beetles are favourite morsels with most birds of this class, and are certainly conducive to keeping them in good health.

Bedding Down.

When the companions, of the nature referred to above, share his quarters, they will be found of use in disposing of any scraps which may fall from the Buzzard's table, and in picking the bones of any animal which may have served him for a meal; but care should be taken to remove all refuse from the aviary from time to time, and



Young Buzzard taking a walk abroad.

to keep it thoroughly clean and sweet by littering the floor with sand, dry peat, or sawdust; or with regard to the outside portion of it, by occasionally renewing the grass, or turning over the soil with a spade. It is always better to have as much as possible of the enclosure covered with vegetation of some kind, as this tends greatly towards keeping the soil in a wholesome condition, and promoting the health of the inmates.

The Buzzard at Liberty.

With proper treatment and attention a Buzzard soon becomes very tame, and even friendly with its owner; so much so, that in a sufficiently-secluded district it may be allowed a considerable amount of liberty. Indeed, one may be so trained that it can be trusted altogether at large, and

this of course is the ideal way in which to enjoy such a pet. It is a bird which loves to soar aloft, however—where on outstretched and motionless wings it exactly resembles a little Eagle—and will inevitably wander at times a considerable distance from home; and there are, unfortunately, but few places in this country where so large and conspicuous a bird can be trusted to escape from the undesirable attention of keepers and other gun-carrying persons. Too much freedom is therefore frequently a misapplied kindness, and it is safer in most cases to rest content with making the bird as comfortable as possible in its aviary.

A Variable Bird.

In plumage the Buzzard varies to a considerable extent, the under parts of some examples being very much lighter coloured than others. Adults are as a rule of a deep, purplish brown above, but the feathers lose much of their gloss as they become old and worn, and before the moult, which takes place annually in autumn, the birds present a greyish-brown appearance. The iris is dark hazel in the adult, yellowish in young birds, and as it is always desirable to begin with a young one, this is a point of distinction worth keeping in mind in purchasing a Buzzard. As with all birds of prey, the female exceeds the male in size, and is commonly the darker coloured.

Buzzards as Foster Mothers.

The partiality of the Buzzard to the task of incubating is well known, and failing eggs of her own she has been known to sit upon and hatch those of Fowls on different occasions, afterwards proving herself a most attentive mother to her unnatural brood. Where a tame bird, without a mate, shows an inclination to nest in an aviary, an excellent opportunity is presented by getting the eggs of some allied species hatched and the young reared under the best possible conditions, a chance which should never be neglected by the fortunate possessor of such a willing foster-mother. If fertile eggs of some rare Hawk or Owl could be obtained on such an emergency the owner would probably find himself amply recompensed for any trouble or expense he might have been put to in getting them, besides having all the pleasure of seeing the strangers hatched and brought up in his enclosure.

A Baby Buzzard.

The photograph here reproduced is of a young Buzzard, just fledged, which was taken from a nest of two, and hand-reared this season. As the picture shows, it is perfectly at home in the orchard in which it was brought up, and as tame and fearless as a bird could well be. The upper part of its head is still covered with the white nestling-down, showing up like a coronet in the picture.

The Rose-crested Cockatoo.



Of all the Cockatoos the great Rose or Salmon-crested species is the most tame and amusing. All the specimens that come to hand seem to be hand-reared, and they are very intelligent though they do not excel as linguists.

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The Yellowhammer:

How to Select and Keep it.

A Paper read by Mr. F. TURNBER before the Members of the City and Suburban Association of Canary Breeders.]

Mr. Chairman and Gentlemen,—Your secretary, Mr. Wynn, has asked me to give you a few details of my methods of treating and keeping the Yellowhammer. I am not going to weary you with a long paper, but will endeavour to put before you, in as few words as possible, my experiences with this bird.

The species, I am sure, is too well known to you all to need a very minute description by me, but I would like to point out that what might be a very good bird for making up a collection in an aviary would probably be quite useless for an exhibition bird.

Points of a Show Specimen.

In picking out a specimen for a show bird, take the largest and richest in body-colour you can get, and one showing a large amount of yellow on the head, cheeks, throat and underparts. The cheek marks should be as black as possible, and the head-markings should run from the bill to the back of the head in the shape of a V. The crown between the black lines should be clear, if possible; this, to my way of thinking, is the most difficult point to get, and when a specimen showing it is met with on the show bench, it ought to be pretty high up in the tickets.

In the spring it is not such a difficult matter to get such a bird as I have described, but after the moult, well, the ideal specimen will probably have a pretty dark head and be not worth twopence as a show bird.

Many birds have quite clear heads in the spring, like a Norwich plain-head canary, but personally I am not much struck with one of this sort, as they do not moult out at all satisfactory show birds, or anything like what they were before the moult.

Colour-feeding.

For exhibition, a Yellowhammer should always be slightly colour-fed; if moulted out naturally, the yellow looks very washed-out and the bird is not "in it" at all, if compared with a well colour-fed specimen.

They are not difficult to get on to colour-feed; I mix the colour-feed with the canary seed at the start, sometimes chopping up a few mealworms with the colour-feed to get them to eat it, and after that they get used to it.

Of course, you want to start before the moult, the same as you would feeding canaries, and gradually bring up the strength of the feed.

They do not want feeding on hot pepper; the tasteless sort seems to suit them best. When possible to get it, I mix about half of yellow feed to the same quantity of red pepper, and keep it up some time after the moult, also giving plenty of mealworms.

The Bath as a Finisher.

The bath should be freely used, and this is the finest thing to put on the polish, or, as it is called, condition. If it is not convenient to give a bath, the spray should be freely used every day, and, when available, there is nothing to beat rain-water, which must be quite clean.

I myself always filter it. To do that you can get from any photographer's what are called filter papers; they are four a penny. Put one or two inside a large funnel. Stand the funnel in a large bottle and fill up to the top of the filter paper, and it will gradually drip into the bottle; then fill up again and so on, and the rain-water will be as clear as crystal and fit for use.

A Model of Deportment.

These birds vary very much in temper, and you should never try to start on an old bird, as they are very difficult to steady. But if a bird of the year is taken in the winter, it usually gets tame quickly.

The one I was so successful at the shows with was a caught specimen and took to captivity well, and won three first and special prizes before the moult and never broke a feather in the process; and in the hands of its present owner, I fully expected it would be first at the Palace last time.

Treatment of New-caught Birds.

I might say, when I get fresh-caught specimens I usually put them in a long flight cage with one or two others, and get them on to seed; and after a few weeks cage them up in a box-cage, such as is usually described in the fancy papers, for a few more weeks or so, and then give them a fly in the flight-cage again, as it freshens them up, and so on till they get steady that way. Some never do get steady, of course; the best thing to do is to let that sort fly, as they are no use as show birds unless steady.

I was successful, as most of you here know, with a Yellowhammer at our show a year or

two ago—a fresh-caught specimen—and that also moulted out successfully and got a card at the Palace; and, as you all know, I got second this year with a Yellowhammer, which I have sold, and it has also won with its new owner.

A Bird of Many Aliases.

The Yellowhammer may be called a bird of many names; its proper name is, of course, the Yellow Bunting. It is called in Shropshire Yellow Amber or Yellow Ombur; in the north the popular names are Yellow Yowle, Yeldren, Yeorling and Yite.

A Simple Songster.

Of course, everyone who has taken a stroll along a country lane in springtime has no doubt seen the bird under discussion flitting along the hedges and perching on the topmost branches, where it utters its plaintive little song, which is commonly rendered as "a little bit of bread and no cheese," and these words seem to fit the notes of the song as well as any phrase I know.

I might say that in Gloucestershire they call it "pretty-pretty creature." If anyone chances to see one of these birds sitting on the top of a furze bush singing, let them repeat one of the above sentences after the bird has uttered his quiet, plaintive notes, and they cannot fail to be struck with the resemblance of either of them to the song.

Does One Spell Him with an H?

There seems to be some doubt among some writers on bird topics as to the correct way to spell the common name of the bird, and in many articles and books it is referred to as the Yellowhammer. Perhaps the initial "h" makes it more euphonious and supplies something that, at first glance, seems to be missing in the form of "Yellowammer."

The Yellowhammer's Relatives.

There are a great many relatives of our bird, either residents or seasonal visitors, in this country, such as the Cirl Bunting, Lapland Bunting, Snow Bunting and Reed Bunting. The Bunting family are easily distinguished by their angular gape and apparently toothed bill, or horny excrescence on the upper mandible.

The most distinguishing feature of the family lies in the remarkable markings of their eggs, known to nearly every schoolboy in country districts. Though the ground colour of the eggs varies in different species, they are all marked with irregular lines, varying in thickness, as if someone had tried to scribble on them with a pen.

Unpopular in Scotland.

When I was staying in Scotland I was told the children seem to treat this bird with con-

tempt. It certainly seems the bird is evilly regarded by the country-folk, and it suffers in consequence. The nest is seldom spared, and the young are tortured in some places.

Fortunately, with the growth of education and greater interest taken nowadays in nature study, these unreasonable and strange antipathies to certain birds and animals are fast disappearing, and the consequent barbarities perpetrated by the village children are becoming things of the past also.

A Final Note on Show Cages.

I forgot to mention show cages. Of course some have a fancy for one colour and some for another. I myself like to show them against a light-green; some prefer a dark-blue enamel for the background.

Some Questions and Answers.

Many questions were asked Mr. Turnber as to if there was any trouble with scaly legs. The answer was that the Bunting family were great sufferers from this complaint, which could be avoided by scaling the legs by soaking well in warm water and using the finger-nails to remove the scales, and after the operation Zam-Buk was very useful to prevent soreness. Some remarks as to the difficulty of getting the Yellow Bunting to eat colour-feed were made. The answer was, Mr. T. found no difficulty in doing so. There were also questions asked as to the age when Yellowhammers are in their prime for show. Answer: About three years; it was generally understood the majority of British birds were in their prime then, especially the Finch tribe. Mr. Wynn asked if there was any suggestion to be made as to the best way to steady Corn-Buntings, as he possessed a very wild specimen. Answer: A steady, fresh Corn-Bunting is rarely met with. They invariably take about two cage moults to get them fit for show. Of course, some settle down to cage life better than others. Mr. Curtis told a tale that he had heard of a man making the remark of the Yellow Bunting being used to get size in Crests, which of course is easily understood. The Yellow Bunting cross with Canary was unknown yet. Mr. T. said he thought the only possible cross with the Yellow Bunting which was likely might be with a Reed Bunting, if tried for in a large aviary.

An Enjoyable Evening.

A very enjoyable evening was spent and was greatly appreciated by one and all, as, though this club was at one time only canary men, it is now getting very strong in British bird exhibitors. A vote of thanks was passed and finished the evening.

Scotch Fancy Canary.



The Scotch Fancy Canary has, as one would expect, its stronghold across the Border, but it also finds many admirers elsewhere. It is, of course, a bird which only appeals to the expert, but in him it arouses the greatest admiration, its semi-circular outline appealing to its cultivators as an especial charm.

Amongst the Birds.

By ATKINSON WARD.

Many people of mature age find themselves unable to appreciate a collection of birds' eggs, however fine or large it may be, but a series of photographs taken direct from nature interest them at once. The reason is not far to seek. An empty eggshell is practically a dead object when arranged and labelled in museum style, whereas a photograph represents wild nature, and arouses an interest in living things. The value of museum specimens cannot be overestimated, but it is of a cold and scientific kind, and fails to stir the more kindly and appreciative feelings we experience when visiting the Zoological Gardens or a private aviary.

Difficulties of Nest Photography.

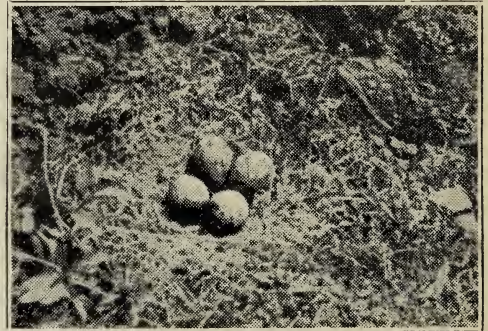
The work in connection with nest photography is of a most varied and fascinating order. There is something fresh to contend with every time one makes an exposure, and the search for nests suitably situated is often a long, although not a tedious, one. Twenty nests may be found, but often only one will serve as the photographer's subject, and there may be peculiar difficulties attending it. Perhaps it is too high, then something must be procured for the operator to stand upon, and when one is perched at an elevation varying between two and six feet, or even more, the position is often more amusing than safe. Perhaps there is not sufficient light in the nest, and if the sunlight never penetrates there, or one cannot wait until the sun reaches a more favourable position, light must be reflected into it by the use of a mirror. The nest may be in a bed of reeds or rushes, and then one often has to wade knee-deep into the stream. A false step at this juncture might plunge one's photographic apparatus into the water, and such a mishap would be disastrous to it. These and many others are the pleasant diversions which serve to keep one wide awake. The work is easier early in the year, while the hedgerows are yet bare of leaves. When the summer is advancing and there is an abundance of foliage everywhere the work can only be carried on under much greater difficulties.

Differing Nests of the Thrush and Blackbird.

The Song Thrush and the Blackbird are amongst our earliest builders, and they frequently nest in exposed situations eminently suitable for photographic purposes. Most of us know the mud-lined nest of the Thrush, containing its four or five blue eggs blackly dotted towards the larger end, and who amongst us does not regret that such beautiful colouring

evades the camera's magic? But the nest and its surroundings and the shapely formation of the eggs are faithfully recorded, and this it is that arouses the interest of the most apathetic.

To an untrained eye the nests of these two birds appear very much alike, but there is really a great deal of difference. Both line the interior with mud, but the Blackbird adds a further lining of grass bents. The Thrush's is deeply cup-shaped. After the half of a circle has been reached, the walls, always of a uniform thickness, are built up considerably higher, whereas the Blackbird's never extends above the half-circle. The mud lining becomes a hard, dry cake, almost like a brick, and during the process of incubation it holds and gives back heat to a degree which is truly astonishing.



Plover's Nest and Eggs.

These obvious points, although they concern two of our commonest nests, are well worthy of notice, and a host of others must reveal themselves to us as our interest in the study deepens.

The Thrush's Music.

When the Thrush is perched on the topmost branch of a tall tree piping his morning or evening hymn I always fit his song with Tennyson's immortal lines :

"Summer is coming, summer is coming,
I know it, I know it, I know it,
Light again, leaf again, life again, love again,
Yes! my wild little poet."

Tennyson wrote those lines to the Thrush's melody. The interpretation is very real, and bird lovers are the poet's debtors for the beauty and truth of the lines. He had an exquisite

faculty for interpreting nature's music. He gives us the hum of bees and other wild melodies to perfection.

There is something individual about the song of each kind of bird. What could be more cheery during the winter months than the welcome note of the Robin? What is more pleasant during the summer days than the "che, chee, chee-ah, a little bit o' cheese or no cheese" of the Yellow Hammer, or the scolding note of "Peggy" Whitethroat?

The Flight of Birds.

Not less interesting than the songs are the various flights of the birds: the swift, sure passage of the Kingfisher, the fitful, jerky flight of the Wagtail, the steady progress of the Rook, the high flight of the Mallard, the clear, circling sweep of the Hawk, and the pretended wounded flight of the Lapwing or Plover.

Before I had reached the field containing the Plover's nest shown in one of the accompanying photographs the birds came suddenly over the hedge and began their palaver, crying mournfully and fluttering their apparently broken wings in unsuccessful efforts to draw my attention away from the nest. The nearer I approached the quieter the birds became, and when I arrived within a yard of it they ceased their discomforting cries and disappeared completely. Had this been a Rook's nest the whole country-

side would have been in a perfect hubbub during the photographic operations.

Wanton Destruction.

A photograph of a Pheasant's eggs was taken by the roadside, and a keeper who came up while I was busy took them away with him to put under a hen. He said the birds in such positions only brought off chicks under considerable danger from the passers-by. The birds would leave the nest to dust themselves on the road, and consequently leave traces of their whereabouts and run other risks of being discovered.

Despite the law a great deal of wanton destruction still goes on. The keeper said that during one Sunday on various parts of his estate he had three Pheasants killed and as many sets of eggs destroyed.

The nest photographer also comes in for a fair share of suspicion. He has quite recently received the designation of "nest-poker," which in some cases he may merit, but in others nothing could be wider of the mark. If he is conscientious he will keep his own labours subordinate to the welfare of the birds, and conduct his operations as quietly and privately as possible, so that he will neither cause distress to our feathered architects, nor attract attention which might subsequently lead to the destruction of nests.

Some Interesting Nests and Eggs.

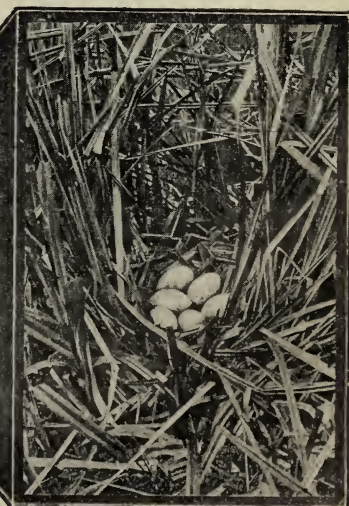


Partridge.



Sent by Mr. George Wear.

Hedge-Sparrow.



Moorhen.

The Partridge lays olive eggs, the Hedge-Sparrow blue ones; those of the Moorhen are speckled.

Little Bird Friends.

A HISTORY RELATED BY MISS H. B. RUTT FOR YOUNG BIRD LOVERS

(Continued from p. 108.)

CHAPTER V.

RADIUM, THE PINTAIL NONPAREIL.

Now we come to the most beautiful and most uncommon of all my birds.

"A bird of rare and radiant hue,
Of colours wooed from sunset sky,
Or rainbow-tinted drops of dew—
With such no human art can vie."

He is not quite so large as Lapis Lazuli, but I am afraid I shall be quite unable to give you by mere words any idea of the beauty of his plumage. Even a coloured picture can scarcely do this, as the feathers are so lustrous and shining. The top of his head, his back, and his wings are a bright sage-green, his face and throat a lovely blue, which shades off gradually into a light crimson, and again into a golden fawn-colour, but so delicately that you cannot say where one colour ends and the next begins. His wings are rather shorter than those of most birds, so that none of the slender and very curious tail is hidden. This is crimson, with the two middle feathers, which are edged with black, much longer than the others, ending in a sharp point like a needle.

A Pleasant Surprise.

When I bought him he was quite young; he must have been a mere baby when he was caught and sent over the seas to England. He was still in his dull-looking nest-feathers, the bright colours only just beginning to show. I was not sure what kind of bird he was; so imagine my surprise when I saw his tail, which was only about an inch long when he arrived, growing and growing, till at last it ended in a spike! His beak is black, and his legs almost flesh colour. This is curious, too, because, as a rule, if a bird has a dark beak it has dark legs, if a light beak it has light legs.

He comes from the East Indies, most likely from Borneo. I have been told that a good many of these lovely birds have been sent over to this country from time to time, but that very few are healthy, and that very few indeed live more than a month or so. This is very sad, but I am quite in hopes that Radium may live with me many years, as he is now a picture of health. When they were first sent over here, people did not quite know how to feed them. They found they did not want insects, so they offered them millet and canary seed, which is all that most small foreigners need. The birds looked at the millet, ate some canary seed, got weak and ill, and died.

The Long-felt Want.

So at last some sensible man began to ask himself what they would be likely to find as food in Borneo. He discovered that large quantities of rice were grown there. So he offered his Pintail Nonpareil the best and cleanest white rice he could buy at the grocer's. But no, the bird would not touch it. So another man, rather more sensible still, suggested that the birds would not find it in this condition growing in the fields. So then some rice in the husk, or paddy rice as it is called, was procured, and that was what the Pintail Nonpareils had been longing for. Radium eats lots of it. It looks like small brown oats, and is very hard to crack. Inside is the kernel, which is the part he eats. But it is not white like the prepared grains we use for our rice puddings, but yellowish, and by no means tempting-looking. However, tastes differ, and if this is what is needed to secure to Radium health and long life, I need hardly say that I shall let him have just as much as he likes.

A Subdued Songster.

He has nothing that can be called a song, only a very soft little trill all on one note, not unlike the chirp of a Redpoll; but it is only a whistling whisper, so soft that one cannot hear it if the other birds are singing. But Radium keeps it up almost incessantly, and is immensely pleased with himself all the time. Certainly very few birds are troubled with over-much modesty; they all "fancy themselves" tremendously. The larger kind of birds are just the same. Have you ever noticed the expression on the face of a white Duck? Self-conceit is writ large all over it.

Proud of His Tail.

But what Radium is proudest of is his tail. Of course it is uncommon, but it is very narrow and thin, though extra long. If he only knew it, his charming face and breast are far more lovely. But he doesn't think so. His one idea is to show off his tail, and when he sees glances of admiration thrown at him, he twists his tail sideways, almost at right angles with his body, so that you cannot help seeing it. For a long time I puzzled as to what his soft little trill meant, always going on and always the same. His is such a sweet, noble face, that surely this thing that he repeats so often must be some noble saying. I had had him for nearly six months before I could make out what it was he said. As some excuse for my dulness, I must tell you that the languages spoken by the natives in the East Indies are very difficult to understand. Well, if it is so with the language of the

men, possibly it is so with that of the birds also. But after nearly six months' study I made it out. What Radium is never tired of repeating is, "Have you noticed my tail?" I must say this discovery was rather a shock to me!

Radium and Toff.

Radium's great friend is Toff. He is really passionately fond of the little fellow and has an immense admiration for his singing. I do not mean the monotonous *roo-too-too*, but his real little song, that has a compass of three or four notes. When he starts this, Radium flies to him directly, and stands near him, perfectly motionless. At first Toff was half frightened and did not much like it, but now he is rather pleased with the compliment, and is hurt if Radium is otherwise occupied, and does not come and listen. Radium, as I said, stands quite motionless, like a stuffed bird, staring at Toff. Then he gives a sudden jump and comes nearer. Then, if Toff's singing still continues, he jumps so near that their beaks touch; Toff pecks Radium's nose, and Radium pecks Toff's nose. They fly apart, and the per-

formance is over for the time. But it is really a most amusing sight, and I am sure you would laugh very much if you could see it. One very pleasant thing about Radium is that he is always in colour. He does not lose his beauty for six months out of the year as so many foreign birds do.

Something About His Home.

I have been trying very hard to "imagine" Borneo, the place where the prettiest of all my birds come from. But I cannot do it. I don't know how it is, but I cannot conjure up any ideas about Borneo at all. So I must just repeat to you what I have heard about it, and then I hope you will be more successful. It is the largest of the East Indian islands. The inhabitants are chiefly Chinese and Malays, with a mixture of the native population. It is a fertile island; coffee, cocoa-nuts, tobacco, and sago are cultivated, and here also are the extensive fields of rice over which the Pintail Nonpareils and other brightly-coloured birds hover in their search for food.

(To be Continued.)

A Promising Youngster.

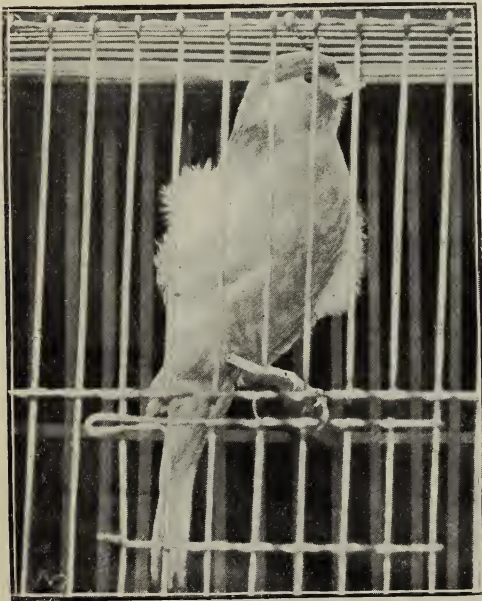


Photo by 'J' H. Bernard]

[Guernsey

Good photographs of Canaries are very scarce considering how very common the birds are, so many readers of THE BIRD WORLD will look with interest on such a very successful photo of this six-week's old bird, taken by his owner, who lives in Guernsey.

Bird Lovers' Library.

Birds of the Countryside, a Handbook of Familiar British Birds. By F. Finn, with 12 coloured plates and 118 photographic illustrations. London, 1907: Hutchinson & Co.; 5s. net.

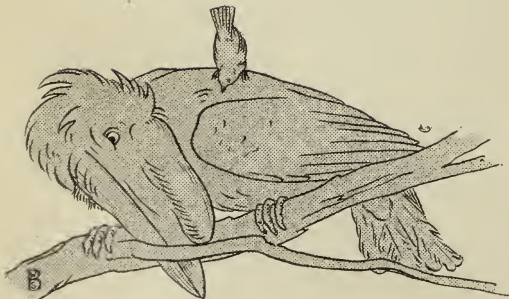
Of the making of books—on British birds—there is no end; but there is always a welcome for one which aims at guiding the beginner through his initial difficulties in identifying his feathered acquaintances. The present work is designed to do this, and can certainly claim to be written in a clear and readable style, and is almost entirely free from technicalities—those bugbears of the amateur. Mr. Finn has even succeeded in giving us a chapter on classification couched in language which anyone of ordinary intelligence can follow. The book is arranged according to the localities in which the birds are likely to be found, only species familiar by sight or reputation being here dealt with, though some rare visitants find a place in the classificatory chapter at the end. The coloured plates are of remarkable beauty, and have mostly been devoted to common birds, in the beginner's interests again, of course; some of these pictures have already appeared in "Cage Birds," acknowledgment of which is duly made in the preface. The photographic illustrations are not all of equal merit, but few fail to be clearly recognisable, and some are nature-pictures of great interest notably those of the Reed-Warbler and the Great Bustard, while in the comparatively few taken from stuffed specimens, the effect is usually good. Altogether we think that it will be generally recognised that this book is very good value for the money, and as it is of a handy size, should have a wide circulation.



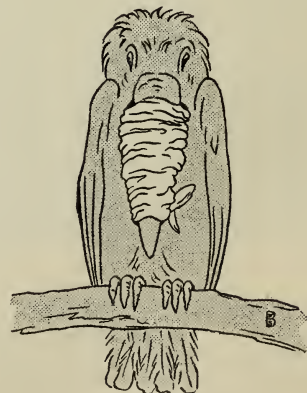
1.—“Hello, nosey!” said the cheeky
Robin.



2.—“Just you clear off,” said the Hornbill, as he
savagely pecked at the offender.



3.—“Great Scott! I’m stuck.”



4.—“Better be more careful next time.”



BLACKCAP WARBLER.

Chirps and Chatter.

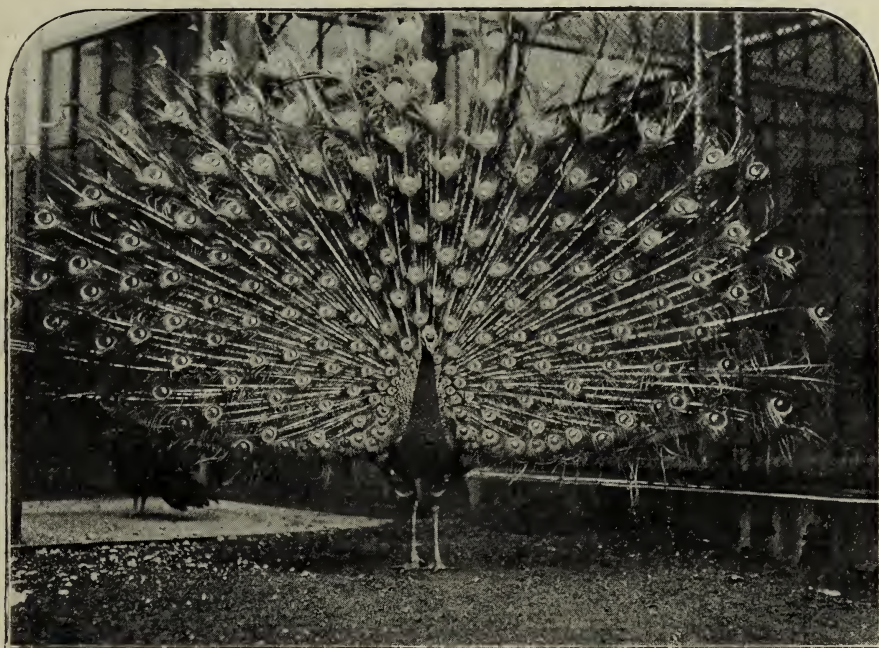
ARRIVAL OF NIGHT'S SONGSTER.

Communications from our friends have made it quite evident that the Nightingale has been as punctual as ever in arriving on our shores. On April 14th, in the neighbourhood of Ware, one was heard singing a lusty defiance to the cruel east wind that was blowing at the time. Enfield readers claim their town as, if not the nearest, at any rate the best place near London in which to hear the Nightingale, for every lane in the old Chase resounds with the song on a summer's evening. We have often heard its

were "tiou-tiou-tiou, ut-ut-ut-ut-ut, tchitchou, tchitchou, tchit-tchit, rrrrrrrrouit!" These are very like the representations of bird song given long ago by Aristophanes, who, by the way, made the Nightingale feminine, as poets before and after him have done in allusion to the Philomela myth, though it is the cock alone that sings.

THE HAUNT OF THE 'GALES.

It has always been a problem why the Nightingale should favour some districts and



Photo, copyright,]

The Javan Peacock in Full Display.

by W. S. Berridge.

sweet notes in Epping Forest, at Chingford, High Beech, and Loughton.

FALSE ALARMS.

There is always risk of false alarms in connection with the "first Nightingale" of the year, which is very often really a Song-Thrush. In early April the Song Thrush sings far into the evening, and its plaintive note deceives many who are anxiously awaiting the coming of the king of song. Anyone who actually hears the bird may be curious to compare his impressions of its song as he would write it down with those communicated to the "Times" nearly half a century ago by a correspondent with a musical ear. He found that the most striking phrases

shun others. It might be supposed that the warmer districts would be most congenial to their habits, yet Nightingales are not found in Cornwall or in South Devon, and they are seldom heard northward of York, while they are plentiful in Denmark. A century ago a patriotic Scot, Sir John Sinclair, tried to establish the Nightingale in Scotland. He commissioned a London dealer to purchase Nightingales' eggs at the liberal price of one shilling each. These were well packed in wool and sent to Scotland by mail coach. A number of trustworthy men had previously been engaged to take especial care of all Robin Redbreasts' nests in places where the eggs could be hatched in safety. The Robins' eggs were removed and replaced by those of the

Nightingale, which were hatched and reared by their foster mothers. The young Nightingales when they were full fledged seemed perfectly at home near the places where they first saw the light, and in September, the usual period of migration, they departed. But the Nightingales never returned to Scotland.

FALSE CUCKOO CRIES.

There is no doubt, however, that most of the Cuckoo cries heard before the second week in April are to be put down to the vagrant village-boy, who delights to anticipate nature in this manner, or even to the cuckoo clock. A gamekeeper informed the writer only last year that his son had a Cuckoo call with which he had deceived many persons, and one enterprising individual had written off to the papers announcing the arrival of the vagrom bird. This year, judging from the brisk sale of Cuckoo-calls the itinerant vendors at the Oxford and Cambridge Boat Race were favoured with, deceptive instruments of the kind must be very much in evidence. The air was, so to speak, alive with Cuckoos on the Middlesex side near the bridge. But the Cuckoo has been declared by trustworthy observers to have been heard in Sussex and Wiltshire in March, and although much scepticism exists with regard to Martian Cuckoos, very rarely has the bird had a better opportunity than this year of asserting himself in March, for towards the latter part of the month there was much warm sunshine and sometimes southerly and south-westerly winds.

A JUDGE ON LADIES' PLUMES.

They do some things better in the United States than we do. For example, Judge Cretein, of New Orleans, has just fined a merchant £10, with the alternative of sixty days' imprisonment, for selling Aigrette plumes, and has stated that in future he will also hold women who are found wearing them responsible. The remote feeding grounds of the birds, he remarked, made it impossible to detect persons who killed them, but to meet the case sellers and wearers of the plumes would be made responsible. We heartily wish that there were similar legislation similarly enforced in this country.

ANOTHER RARE BIRD SHOT.

Mr. Weaver, gamekeeper, shot a Buzzard in Guiting Wood, near Cheltenham, one day last month. The bird is a rare visitant of these parts. The wings extended are a yard across, and the claws formidable weapons for seizing and tearing prey.

A DOCTOR'S AERIAL ASSISTANTS.

A doctor in the north of Scotland finds carrier Pigeons of much use to him. He has a scattered practice, and when on long rounds he takes several Pigeons with him. If one of his patients needs medicine immediately he writes out a prescription, and by means of the birds forwards it to his surgery. Here an assistant

gets the message, prepares the prescription, and dispatches the medicine. If, after visiting a patient, the doctor thinks he will be required later on in the day, he simply leaves a Pigeon, with which he can be called if necessary.

BIRD SKINS AND FEATHERS.

The returns for the six plume-auctions held at the Commercial Sale Rooms, London, last year, are not encouraging reading for the bird-protector. The numbers catalogued of Birds-of-Paradise and of packages of "Osprey" feathers were as follows:

	Osprey Feathers Packages.	Birds-of- Paradise.
February	327 ..	8,508
April	260 ..	7,188
June	289 ..	11,841
August	242 ..	3,948
October	485 ..	5,700
December	265 ..	3,600

This gives a total of 1,868 packages of "Osprey," but owing to the fact that the packages are of varying sizes the actual quantity of feathers can be only roughly estimated. An average of between 200z. and 300z. to the package seems to be a fair estimate, and at 200z. the total would be over 37,000oz., or, on Professor Newton's calculations, the feathers of nearly 150,000 birds. The total number of the Paradise skins is 40,785.

IS THE BLACK-BACKED GULL PROTECTED?

Referring to a case decided at the West Penrith Petty Sessions, when Mr. Eric Corningwood was fined 7s. for shooting a Black-backed Gull, a correspondent says: "Having always understood that both the great and lesser Black-backed Gulls are exempt from the operation of the Wild Birds' Protection Act, and can be shot at any time of the year, I shall be glad if any of your readers can tell me if I am correct. The Act reads, 'Gull (excepting the black back),' and if I understand it rightly I fail to see how Mr. Corningwood could possibly have been fined for shooting one."

NATURE'S REASON.

Writers on Sea-birds have for generations admired and wondered regarding the shape of the Guillemot's egg, which by its pyriform or obconical shape is prevented from rolling off the ledge or smooth rock on which it is laid. But the Plover's egg has the same form, and it, certainly, has no chance of rolling off a rock or of anything else.

SPRING FLOWERS AND BIRDS.

Brilliant weather in the second half of March often brings out the flowers to their undoing. With the natural optimism of unsophisticated things they conclude that warm sunshine spells spring, and sometimes they have to endure an April blizzard for the discouragement of too much faith. The birds are occasionally deceived in



The Long-Tailed Titmouse.
(Hanging head downwards in search of insects.)

the same way, and even the migrants, though it can hardly be that they are taken in by fine weather in our part of the world. In other words, they can know nothing about the weather in our part of the world till they arrive.

EARLY ARRIVAL OF THE CUCKOO.

Enticed by the spring-like weather which prevailed in March the Cuckoo seems to have been unusually early in his arrival in this country. From far south and distant north have come notices of this fact. If these widely separated observers have not been deceived by demonstrative spring poets it would seem, therefore, that the greatest popular favourite among the migratory birds is this year making us an unusually early call. The Cuckoo is due in the South of England about the middle of April, and in Scotland a week or so later. Its earlier arrival used to be accepted as a presage of an early summer, and for that reason, no doubt, a genuine bad character among the birds (on moral, not agricultural, grounds) has attained its place of high favour. The announcements referred to serve as a reminder of the fact that the poet of the Cuckoo, like the rest of his kind, could make no great claim to accuracy as a naturalist. "Sweet

bird, thy bower is ever green," wrote Bruce. But the arriving Cuckoo, even when it comes at the right time, finds little greenery to rejoice its heart, and, being nothing of a sentimentalist, it probably cares not at all. Indeed, the Cuckoo is not a "bowery" bird. It prefers the open country, and there is no part of Britain where at the right season it may be heard in greater numbers than in the extreme north-west of Scotland, an almost treeless region.

PRACTICE BEFORE PRECEPT.

The Southport branch of the Wild Birds' Protection Society has found an excellent method of fighting the depraved taste for "murderous millinery." It has induced a number of the leading milliners to fill their shop windows with ladies' hats tastefully trimmed without birds' feathers or wings. In each window is placed a printed card stating the purpose of these little exhibitions. This spring show of "non-murderous millinery" is becoming an annual event in Southport. It is well worth imitating in other places. It is more hopeful to crowd out the hats trimmed with fragments of dead birds with a positive counter-attraction than to concentrate attention on what is withheld.

An Interview and a Moral.

A Chat with a Yorkshire Worthy.

By J. S. CLINCH.

The ancient town of Keighley, right in the heart of the Wolds of Yorkshire, the country of the Brontës, with its quaint byways, singular charm of old buildings and breadth of undulating landscape, and its "right folk," make it a delightful centre for those on holiday bent. When one adds to this the knowledge that within its compass some of the very choicest specimens of the bonny Yorkshire Canary have seen the light no apology need be offered for suggesting it as a taking-off place for a round of visits to the hearty fanciers to be found galore within a radius of twenty miles or so.

I had the good fortune, one afternoon recently, to catch that sterling fancier and experienced breeder, Mr. Frank Spencer, at home. A hearty handshake and greeting preceded a visit to the bird-room, where evidences were strong of the fatherly care shown towards his numerous charges. A pleasant hour of birdy chat and reminiscence followed, for what topic equals that of the "brids" in the North Country? Mr. Spencer breeds and exhibits in conjunction with his son Ernest, whom, by the way, I was unfortunate in not seeing. The success attending their hobby is in evidence in the souvenirs and prize cards, which appeared almost countless. When one passes a critical eye over the stock the reason is at once evident. Type, and type, and again type—with plenty of quality—is most marked.

The bird-room is situated in the attic—a good-sized room, lofty and well ventilated with roof lights east and west. The first dawn of day to the last glimmer of Old Sol as he dips into the west are garnered here. Of what importance this is, in the "first round," during the short days, fanciers of experience will appreciate. Neither are there aids of the heating apparatus description; no mystery, no secrets, just simple, cleanly management.

Quite sixty birds are caged off, some in flights, but mainly in separate cages of the box order; not a soft-feathered or wheezy bird amongst them, all alert and fit to show for all they are worth.

Left to my own devices, I got Mr. Spencer to run a few birds into show cages. "Now, Mr. Spencer, just fettle this buff hen up a bit. I like the look of her." No sooner said than done. "This hen," said Mr. Spencer in reply to a question, "has done very well for me, winning 1st and special Keighley, 1st Huddersfield, 1st Skelmanthorpe, 1st Windhill, and 1st at the 'Cinderella' Show at Allerton, Bradford, recently. I like the hen," and I quite agreed—size, position, and quality all over. A young ticked yellow cock next took my fancy—a rod

in pickle, I could almost imagine my friend saying. "What about this ticked buff cock—a bit of a warrior, eh?" "Yes," rejoined my host, "a Palace winner, with a list of about thirty notches to his credit." Not bad this, I thought, and, looking for some very special feature about the bird, I had it borne in upon me that a better would want some finding.

"This young buff cock, Mr. Spencer, looks a likely bird. Have you shown him yet?"

"Yes, once," replied Mr. S., "at Windhill, but he only got in the 'tickets.' He will do better with more age over his head." I next noticed a yellow hen in grand form, although no youngster. Her record astonished me, winning twice at the Palace and seven other firsts in succession, two seconds, and two thirds, all in the best company. Another hen—a buff—took my eye next. She was hatched in 1903, and, together with the yellow hen just mentioned, came in for deserved eulogy in "Cage Birds Annual" for 1904. These two hens would pass for second-season birds. They speak volumes for the management and care spent on them. Another nice hen, rather smaller, but beautiful in quality, 3rd Keighley, looks like making up into a smasher.

A buff cock, 1st and special and special for best bird in the show at Morecambe, is a lovely specimen. "What other honours has this bird captured?" "Oh," rejoined Mr. S., "seven firsts in succession." I began to fancy myself as a judge of Yorkies, and laughingly put this view to Mr. Spencer. Modesty, however, forbids my recording his rejoinder; but the merest tyro could not go wrong over these birds. They are a remarkable collection, particularly the hens, for evenness of type, position, and finish.

"Now with regard to your methods of management?" "Well," answered Mr. Spencer, "I practise the simple method—just sound stock, healthy environment, and commonsense treatment."

"Yes, but more than these are required to attain to the position you have reached in the fancy." "Well, I suppose judgment and consistency comes in also. One must build up a strain until some certainty is reached in breeding results."

"That seems the general opinion of most experienced fanciers, but in your case, Mr. Spencer, how did you start?" "It is a long time ago," replied Mr. S., "quite thirty years, when accident put me in possession of a stock of birds; but not being satisfied with my material—of course, after some seasons' breeding—I put myself in the hands of Mr. —, of Windhill,

and I have never looked behind since. I have never bought a winner, but always bred them, though I have sold plenty that have done well for their new owners."

"How do you account for what I may call the marvellous condition of your birds—those, I mean, of two, three, and four years old?" "Cleanliness and great care during the breeding season are the main factors," came the reply. "I never," added Mr. S., "allow my best cocks to do any feeding, and always limit the nests I take from my best stock to two per season." Here, I thought, is a tip for the young fancier. Nurse your best stock, reserve their strength, and the result will be healthier offspring, full of virility and a longer career on the show bench. Restraint is the watchword in this bird-room.

"In your opinion, Mr. Spencer, how does the modern Yorkshire compare with those of your earlier days?" "There's no comparison," came the reply. "The bird of to-day is miles in front of those of even a few years ago, and improvement is marked every season."

"Then things look hopeful for the 'Yorkshire Fancy'?" "Never more so," was the instant answer; "and let me add, as a result of years of observation and a knowledge of the fanciers of the day, that improvement in the Yorkshire Canary has not yet reached the high-water mark. The fancy Press—a thing unknown in my younger days—the really lucid and practical method of bird journalism has made it possible for a keen bird lover to acquire a working knowledge to-day in an incredibly short time. Shows are plentiful, and, so to speak, at one's door.

The young fancier of to-day will be the champion of to-morrow. His way is a pleasant one, far different from the strenuous time when miles had to be covered if one was to enjoy a bit of birdy chat with a fancier who would part with a little of his hard-earned knowledge."

"Before saying good-bye, Mr. Spencer, will you be good enough to give me some data as to the most desirable way of introducing quality and its accompaniment colour into a strain where type is already fixed?" "With pleasure," replied my genial host. "A cinnamon ticked or marked hen or two and a couple of heavily variegated (green) cocks should be in every breeder's room. They are, in my judgment, necessary—the one for feather, the other to keep the colour up."

"Shortly, then, Mr. S., your advice to the young fancier is: Start with the best stock possible, mark the results, and carefully introduce foreign blood, if it is necessary, but in a tentative way?" "Well, yes," was the reply. "With three or four pair of birds the intelligent fancier can build up a strain, and little occasion will arise for going outside his own stock for change of blood. And I would advise," added Mr. Spencer, "put your birds in competition with the best, attend the shows. But"—and he laid great stress on the "but"—"have your own ideal. There is plenty of latitude in the standard, and the fancier who stamps a certain individuality upon his stock is certain of recognition."

Twenty minutes to train time and a good mile up hill to the station precluded further pleasant talk, so a hearty adieu and off.



Photo copyright.

[W. S. Berridge.

The Flamingoes in Three Island Pond at the Zoological Gardens.

Halcyon the Kingfisher.

By G. H. LEWIN.

Halcyon the Kingfisher is sitting on the dead branch of an old hawthorn bush which hangs over his favourite fishing pool, watching quietly and keenly for the passing of a minnow or any other small fish in the water beneath.

The stream which he usually haunts is slow and generally clear, meandering here and there through green meadows and leafy woodlands. Halcyon knows every twist and bend, for he has fished the stream and along the main river and up almost to its source for full five seasons, with ill luck and good, fair weather and foul, coming through many dangers, but still alive and free. Life seems very good to him, as surely it should, for there is no other bird or beast in all his little world so brilliantly beautiful as he. The autumn sun shines on his new-donned coat of feathers, which flash with tints from turquoise blue to deepest green as Halcyon moves on his bough; his breast feathers, like copper and gold, give added lustre to his charms.

Patience Rewarded.

There is no wind; the surface of the stream is smooth and the water clear as crystal, so Halcyon has not long to wait, for soon some little bleak go up the stream quietly and easily, with no thought of danger. Halcyon springs off his perch, and, with fluttering wings, hovers for a space with tail bent down, beak to breast and body like a spring, then like a flash of light he turns over and darts downwards into the water beneath, coming up as quickly with a silvery bleak in his strong bill. Back to his perch he flies, shaking the wet from his shining plumes, and then, taking the little fish by the head, he swallows it whole, and waits as patiently for the next victim.

The Birthplace of Halcyon.

Halcyon was born in a hole in the marly bank of the main river some two miles away. It had belonged to a water-rat once, but the rat had left it, and Halcyon's parents had cleaned it out and altered it a little, so that it sloped upwards from its entrance, and about four feet in had scooped a larger hollow to form a nesting chamber, in which his mother had laid eight beautifully clear and transparent white eggs upon some bones from the fish they had caught. She sat upon her treasures until the little birds cracked the shells and hatched, then both parents had a busy time; but it was May, and the days were getting longer as the little birds grew larger and more voracious, so there was more time to hunt for small water insects and to catch other small edible creatures for the youngsters; but as they grew they began to be able to eat small fish. Although at first they were very ugly, and got uglier each day until their feathers

began to appear, before they were a month old they looked almost like their parents, and soon began to leave their home for the wide world beyond. Halcyon was always the foremost in pushing forward his open mouth for food, and now he was the first to peer out over the water from the hole in which they lived. It seemed to him to be a wonderful place, the water running underneath and the green plants growing on the banks and trees throwing their shadows here and there. He looked and wondered, and could not understand it all.

An Unfortunate Tumble.

One day he felt his strength was so great that when his father came with a fish in his mouth Halcyon fluttered out to meet him. It was a rash attempt, and nearly ended sadly for poor Halcyon, who fell into the stream, flapping his wings lustily on the water, calling loudly to his parents, who flew anxiously over him. Fortunately, a few yards brought him to some shallows near the bank, and he scrambled and fluttered out, somewhat frightened, but none the worse. In the next few days the whole family had come from their nesting-hole, and could fly short distances and cross from bank to bank and bush to bush. Their parents were anxious for them now, and not without cause, for before they had all been taught to dive for fish and to search for water insects three of them had been lost; one was killed by a bloodthirsty stoat as it was sitting on the bank waiting for food, another had been killed by some boys with stones, and the third went without any trace one misty morning. The danger which they were all in when the boys chased them with stones was a good lesson to those remaining, and was never forgotten, especially by Halcyon, who had felt a stone graze his short, strong tail.

Halcyon Starts Life for Himself.

When the first autumn came Halcyon found himself alone. His parents had left them all, and brothers and sisters had drifted apart, each fishing and catching for himself alone, and each finding favourite stations from which to watch for prey. Life had now become a stern reality to him, for several times when there had been heavy rains the streams were all muddy and sometimes overflowing, so there was no fishing to be done at all. At these times Halcyon fell back upon any insects and worms he could find in the small and narrow streams and springs which were but little affected by the heavy rains. He managed to get through the autumn very well, but the winter was early, long, and sharp, and poor Halcyon had no experience of deep snows and biting frosts. He did not feel the



The Kingfisher.

"Halcyon is proud to show his new-found mate the beautiful stream and pool he calls his own."

cold very much, for he was hardy and strong, but he had a difficulty in finding food, so he travelled, directed by some deep and long-seated instinct, from the stream to the river, and thence down to the river's mouth and the sea.

His First Winter.

It was an irksome journey, for food was scarce, and he had to travel in the teeth of a strong wind, bringing cold blasts from the frozen north-east; but he knew how to fly well now, and, keeping low above the fast-closing open water, went swiftly in straight and level flights, only turning when he must to follow his track along the slow-flowing river to the ocean, where the frost was held in check by the brave salt sea. The whole winter long he travelled up and down the muddy banks of the river mouth and along the adjoining shore, picking up small fish and worms and many strange insects in abundance. He did not, however, care for the dirty mud, rough seas, and the boisterous and noisy birds of the coast. He longed for the frost to go again, so that he could get back to his stream with the clear water and pebbly shallows.

New Experiences.

After waiting some three or four months the south-west winds began to blow warm and soft, carrying away the frost and melting snow and ice. The nights were still cold, but in a few days the white world had gone, and the river was running strong and full to the top of its high banks; but Halcyon was happy, and began to follow the water back again to his home pool. He picked up insects and worms and small prey of any kind he could, but the water was too muddy to see into until he went up some small side streams, and then he found some clear and smooth water, where he could stop and fish. He saw several other Kingfishers up these side streams, but made no friendships; but up one of them he had a narrow escape from capture.

A Capture and an Escape.

It was a particularly attractive length of water, and several Kingfishers had stopped on their way from the coast to fish for a few days while the main river was clearing. The early spring days were bright and sunny, and all the birds were enjoying themselves after the long winter, when one day two men, one on each side of the bank, began to walk down stream, beating the bushes as they came. Of course the Kingfishers, each one as disturbed, darted with his arrow-like flight down stream well round the next bend, but still the men came on, until there were seven or eight birds on the move. Fortunately for himself, Halcyon was with the last one or two going down, when suddenly the men started to run as quickly as possible and shout loudly, so that the birds went heading down stream in right good earnest. Halcyon was suddenly startled to see another Kingfisher only a few yards ahead of

him appear to stop dead and bunch up in the air, and before he was aware of it a fine net seemed to appear before him, and crash he went into it, too; but he had slowed his speed, and was able to get loose from the net and dart away over the adjoining banks to the main river. He was much dazed, and for some days was stiff and sore; but he was free, and what was stiffness and soreness in comparison with freedom? He had many narrow escapes that spring, for several times men with guns came prowling along the banks, ready to shoot anything and everything that came to hand. He kept clear of them all, however, and when spring-time had really come the men with guns came no more.

Halcyon Finds a Partner.

Halcyon wandered much on these bright days. He did not feel he could settle in one place, until one April day he met a bright young lady Kingfisher watching over a beautiful pool in a small stream overhung with alders and willows. He stopped and talked in his bird language to her, and she was quite happy to talk to him. Evening came on, and so they both roosted on bushes near together for the night. The next day they travelled up and down stream and enjoyed themselves so much that Halcyon was loth to leave his new-found friend. They still strayed together, until Halcyon asked her to come with him to his favourite fishing pool on his home stream. After much curious twittering she agreed, and they travelled by short stages up the river until they reached it.

The Building of the House.

Halcyon is proud to show his new-found mate the beautiful stream and pool he calls his own, and soon they begin to make a hole in the bank for a nesting-place. There are no rat-holes here, so they must dig for themselves; but they manage to burrow a nice tunnel just large enough to get in, with a nice, round, warm chamber at the farther end. Here they put their cast-up fishbones, Halcyon's wife lays her beautiful white eggs, and they rear their young as their parents did the year before. They go through the same hard work of fishing for their hungry youngsters until they can gain food for themselves.

The End of Freedom.

Now Halcyon has seen five years of life and reared five different families of youngsters, and all are scattered abroad, many of them, no doubt, killed; but Halcyon is a wary bird of long experience, and knows well how to keep out of any dangers which are familiar to him. Each season he learns of other and unknown dangers, but as yet he has kept free. This season has been the best he has ever known. The sun has given many bright and clear days, and the winds have been soft, the air has been full of life, and Halcyon and his busy wife have had less labour than before in getting food for their brood of youngsters. May flies and dragon-flies have paid

their toll to the swift dart of the meteor-like birds; but Halcyon's days of freedom are nearly over, for one day in the autumn there is a drive of the birds down the stream, but this time the nets are cunningly placed, and Halcyon and nearly all the Kingfishers on the stream are caught. Halcyon sees the men and darts down stream, but as he passes through a short stretch of woodland he sees a net stretched in front of him. He tries to dart upwards, but the net is over him and at the sides as well, and before he can turn back the net falls upon him, and he is caught, put into a dark box, and when he is released he finds himself surrounded by the hated netting everywhere; but there are several other Kingfishers with him, and there is a beautiful little stream running through his prison with plenty of fish, and after a few days of sulking he begins to feed again. But until his death he feels the want of the freedom of the life he lived before he met the hated net and lost his precious liberty—more precious to him than to the others, caught when they were young, who had not felt so much as he the beauty of a free, wild, and unfettered life.



The Home of the Sand Martins.

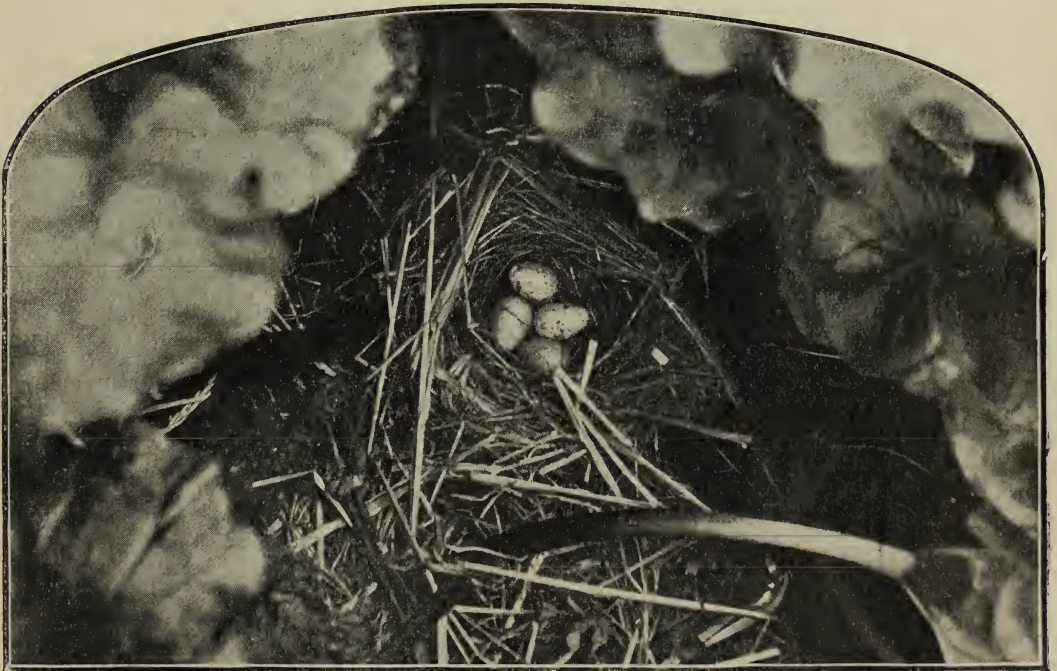


Photo.]

A Queer Nesting Place.

[Mr. Geo. Bowles.

A Blackbird recently built its nest in a clump of rhubarb in a garden at Luton. Our photo shows nest and eggs.

Crisp Conundrums.

Mr. R. L. CRISP (London C.B.A.) Delivers Himself of a "Thesis" on the Yorkshire Canary.

According to Nuttall a thesis may be taken to mean "a position, a proposition, or a subject." As the Yorkshire Canary is a "position" bird, Mr. R. L. Crisp, in delivering a paper on the "subject," hit upon a happy title for his "propositions," and the latter included a few choice conundrums that we respectfully commend to the consideration of the curious with a turn for more or less profitable speculation. Here is one of his problems:

In order to improve the colour of your birds, is a yellow cock bred from a good coloured yellow cock or a yellow cock from a good coloured yellow hen or a yellow hen from a good coloured yellow cock or a yellow hen from a good coloured hen the best for the purpose, and the same question applies to buffs?

Sounds very much like a test for drunkenness, doesn't it? At the outset it was proposed by Mr. Franz and seconded by Mr. Lazarus that Mr. Dewhurst take the chair. The Chairman, upon taking his seat, called upon Mr. Crisp for his promised paper. Prefacing his remarks by a brief apology, saying that the longer he remained in the fancy the more difficult he found it to dogmatise, Mr. Crisp went on to remark that it was the work of a lifetime to breed an ideal Yorkshire Canary. There was not one per season on the average, or how was it that a bird six years old could score over all birds in their first and second seasons? They had seen an example of this. He didn't want to dishearten the young fancier, but if ideals could be turned out "like ripe cherries" the art of breeding would lose half its spice.

It was necessary to attend good shows and get a proper conception of the ideal bird before you strove to breed for it. The diversity of opinion existing amongst some judges was very perplexing, and the last season was prolific of examples in divergence of views. When he started in the hobby Mr. J. Bexson was judging very largely, and he believed in large, typical specimens. That accounted for his—Mr. Crisp's—preference for that style of Yorkshire. He did not think the birds now were so large as those of some years back. If a Yorkie was seven inches long, so much the better, to his mind, but they were difficult to get. The use of the Lancashire to obtain size was not now necessary, as plenty of Yorkshire birds with size were obtainable, and a large Yorkshire somewhat faulty was, in his view, preferable to a Lancashire for Yorkshire purposes. He liked a bird to combine exhibition points with stock value.

Mr. Jonas Knight had stated that as size may

be inherited he would as soon breed with small birds from large parents as from large ones so bred. He also said that he had bred so for twelve years without any tendency to diminution in the progeny so produced. But he—Mr. Crisp—thought that upon the principle of like producing like the result would not bear out such contention. It appeared to him that the pairing of large birds with an inherited tendency to size was preferable.

But mating at sight, he thought, played a greater part than inborn tendency. If blood were everything, why did the large majority of fanciers retain their best specimens year after year? If their more mediocre relatives would produce similar results, why did such men as Shackleton and Barnett retain their finest for themselves? Mr. Metcalfe, a well-known breeder of greens, lecturing the other day, said he would sooner have the birds than the pedigree. He—Mr. Crisp—had known good specimens come from birds worthless in appearance, but the chances of producing winners from birds without breed in their looks was extremely small.

He liked to pair a large, good-feathered buff hen with a small, typical, breedy yellow cock, and on more than one occasion he had succeeded in breeding a really good bird from such a mating; or you could pair stilty-legged hens with large cocks down on leg, but, unfortunately, these hens were not plentiful; or, again, by the pairing of the above-mentioned small, breedy yellow cock to two medium-sized buff hens—but be sure they are of good quality, even if they fail a little in position—with the sole idea of breeding "breedy" hens to pair, as remarked before, with cocks rather across the perch. In the subsequent or third season a little judicious inbreeding on the side of the hens (say aunt to nephew), with discreet selection of the stock, should bring about the desired result. It would, said the lecturer, be obvious to them all that this was the sequel to pairing the cock and two hens in the first instance.

"I believe," continued Mr. Crisp, "that cinnamon greens may also be used with advantage for crossing with black-eyed birds to improve quality and colour, and I do not see why type should be materially affected thereby." He was inclined to think there was something in the contention that cinnamon-bred birds were less hardy than black-eyed.

For the purpose of breeding cinnamon-marked birds (both cocks and hens) it was best to have only one of the partners a marked bird and the other a pure pink-eyed, but if both partners were marked they should be ticked only, and even

then some of the young might be heavily marked. It was very difficult to get cinnamon blood set so as to produce all nicely-marked buffs. On one occasion he had a yellow pink-eyed hen from Mr. J. Thornton, and out of a dozen young she bred her owner not one was foul marked. In the first two nests there were five young, all cocks, and amongst them one or two clears, but in a subsequent nest, when he used the father of the cock previously used, the progeny were all hens—two clears and one cheek and wing marked.

Some Notabilia Dicta.

From a cinnamon wing-marked hen and black-eyed cock he had bred practically self-cinnamon greens.

If yellows were getting too stout or had too much feather double yellowing would be found beneficial.

Money was never the sole cause of a bird-breeder's success.

What would be the use of inbreeding with third-rate stock simply for the sale of it? Inbreeding set the faults as well as the good points. It brought in its train a diminution in size.

Breeders ran a risk, slight, perhaps, but still a risk, in introducing fresh blood, especially those whose stocks were nearing perfection.

He had bred a Southern winner by three consecutive outcrosses.

He was a great believer in medium-sized, good quality hens.

He had used cinnamon blood with satisfactory results. It gave a nice silky texture to the feather. He favoured it also as a means of improving colour, but not always.

He liked cinnamon greens crossed with black-eyed birds for improving type and colour. To improve colour he gave preference to a good-coloured cock, though he had secured equally good results with hers.

He would advise all breeders to have some cinnamon-marked blood in their room for their own edification.

Double buffing, he believed, increased the web of the feather, and was useful for filling up the neck of the bird. It tended to tighten feather and to produce a preponderance of buffs. Double yellowing decreased the web of the feather, but not the length. Both double yellowing and double buffing should have their limits, and not be carried to excess.

After introducing Belgian blood he had found great difficulty in regaining lost size. He could not honestly advise anyone to follow his experiment.

He had obtained excellent results from using large hens with small cocks.

Large buffs were easier to obtain, and usually of better quality, than large yellows.

In the ensuing discussion,

Mr. STEVENSON wondered why cinnamon blood, considering that it denoted albinism, did not produce poor colour. The lecturer held that cinnamon blood improved colour, and drew attention to the fact that Mr. Easterling, a very successful member, who was present, got his best coloured birds from a bird with cinnamon blood in her. Mr. Easterling observed that this hen was a rich salmon-cinnamon colour.

Mr. KNIGHT thought you got equally good colour from cocks as hens. In breeding for marks the cock bird, he thought, had a lot of influence. If you used buff-marked cocks you bred heavier-marked birds than if you used heavy-marked clear cocks and marked hens. In breeding cinnamon marks, if he used a cock he invariably got the markings too heavy.

Mr. BOXALL wanted to know what was meant by bottle-shaped. Did the lecturer mean a whisky bottle or a soda-water bottle? The lecturer said it was a sort of cross between the two. (Laughter.) Mr. Boxall would understand what he meant. (Laughter.) A bottle bird was practically a round-shaped bird.

Mr. BROOME queried what was meant by roach-backed. Mr. Crisp said that probably the bird suffered from having a fin on the back. (Laughter.)

Mr. KNIGHT thought it meant the bird was fuller at the back than it ought to be.

Mr. CRISP: It's a sort of "got the hump." (Laughter.)

Mr. EASTERLING wanted to know what the lecturer thought was the most difficult fault of all to breed out of the Yorkshire.

Mr. CRISP: Trousers. (Laughter.) I have the greatest aversion to trousers—(continued laughter)—not for myself, Mr. Easterling, of course, but for the birds. To my mind, this fault runs much on a par with the fault of "hinge tail." If a bird is bad in these respects it is not worth using. He did not refer to a "hoopy" bird, which was not so objectionable, but to a bird that showed a distinct angle where the tail joined the body. The perennial question of heating the bird-room then arose, Mr. Knight advocating a perfectly cold room. The lecturer thought that through the moult a little heat was beneficial. In Yorkshire he had been over some breeders' rooms (cold rooms), and he was disgusted to find the excreta in the cages almost up to the level of the birds' legs. He was told by the offenders that they left it there to generate heat.

Hearty votes of thanks to the lecturer and to the Chairman concluded the meeting.



A History of Birds.

By W. P. PYCRAFT, A.L.S., F.Z.S., Etc.

(Continued from p. 124).

Now, when the wing is extended, each of these sequents is found, on examination, to support a series, or row, of conspicuously long feathers—at least, in a long-winged bird. These are the primaries and secondaries, or “flight feathers,” and the feathers of the upper arm, which are known as the “tertiaries,” or technically as the “parapteron” and “hypopteron,” for, unlike the two first-named series, the flight-feathers, they form a double series, one above the other. Their use is to fill up the gap that would otherwise be left between the innermost flight-feathers and the body, which gap, unfilled, would seriously hamper flight. These feathers can best be seen in a wing from which all other feathers have been removed, as in Fig. 2. The “other” feathers, just referred to, are known as the coverts, and they form several well-defined rows, known as the major coverts, medium coverts, minor coverts, and marginal coverts (Fig. 3), and they present, among different birds, very different characters, in so far as the number of rows and their “overlap” is concerned. As to the number of rows: these vary only in so far as the minor and marginal coverts are concerned. Neither on the upper nor the under surface do the major or medium coverts exceed one row, but the minor coverts may number as many as six or more, or they may be altogether absent. The marginal coverts, which are the smallest in the wing, and clothe its front or anterior margin, though varying in number, are always represented by several rows. The matter of their overlap is important, and must be carefully studied both by artists and those who are engaged in the difficult problem of the classification of birds. The major coverts, which immediately overlie the flight-feathers, always overlap one another in such a way that their free edges are turned towards the tip of the wing. The other coverts vary, in this respect, in different groups of birds, so that in some the free edge is turned towards the tip of the wing. The few of the innermost have their free edges directed outwards.

On the under surface of the wing the medium coverts are in many birds wanting or incompletely developed. The minor coverts are often entirely wanting, while the marginals—those, at least, nearest the hinder border of the wing—are commonly of considerable length, and cover up what would otherwise be a bare space along the under side of the wing.

The Action of the Wings.

But this question of overlap plays a much more important part than any yet mentioned—at

any rate, in so far as the flight-feathers are concerned. These, it is to be noticed, like the major, or “greater,” series of coverts, are so arranged that their free edges, when the wing is extended, are turned towards its free edge. The full meaning of this will become clear directly the part these quills play is remembered, for as the wing is raised the air forces its way between the feathers. At the downward beat, however, the webs, or vanes, of the feathers are pressed closely one against another, so as to form a continuous, unyielding surface, whereby the body is raised and propelled forwards. They have, then, these quills, a valve-like action. Were the overlap of the opposite kind—“proximal” instead of “distal”—the unyielding surface would be formed on the up-stroke of the wing, while in the down-stroke all lifting power would be lost. Compared with the bat’s wing, the wing of the bird is vastly superior, and for this reason: The wing of the bat is formed by a membrane stretched between long and slender fingers, so that any serious injury to the wing membrane permanently disables the creature. The bird’s wing, on the other hand, has its flying membrane formed by a number of overlapping, elastic, ribbon-like structures—the quills—which are periodically renewed, and can be replaced if injured.

The Problems of Flight.

The analysis of the movements during flight bristles with difficulties, and is, moreover, so dependent upon dry and abstruse technicalities for explanation that it must suffice to give a brief summary of the main facts. These I have taken from a recent work by one of our greatest authorities on the flight of birds, Mr. F. W. Headley. His account of this intricate problem, though wonderfully clear, is too long and rather too technical for reproduction here, but, put briefly, he has shown that the bird propels himself by virtue of the resistance offered by the wind to the down-stroke of the wing and the velocity of the flight. This velocity, by increasing the resistance, gives the wing, especially at its tip at the end of the down stroke, a grip of the air, so to speak, so that the bird literally shoves himself forwards, and slightly upwards, at each stroke, the wing-tip serving as a fulcrum, thereby raises and supports the body, and at the same time drives it forwards. At the end of the stroke the hand is bent upon the forearm at the wrist, while the whole wing is raised over the back and swung forwards and downwards once more, the hand being straightened on the forearm at the top of the up-stroke. Thus the longer the wing the swifter the speed, a rule which is

well illustrated by such birds as the Swift and Swallow, while, as is well known, birds with short, rounded wings are poor fliers. As to the speed at which birds fly. A great many extraordinary statements have been made on this subject. The American Golden Plover, for instance, has been said to cover no less than 1,700 miles in a single night while on migration! Nevertheless, there is no doubt that a high speed is maintained by many species. The Swallow, for instance, can probably on occasion attain and keep up a rate of about 100 miles per hour, while the homing Pigeons, according to the records of one of the Pigeon-flying clubs, may attain a rate of over eighty miles per hour. Fifty miles has certainly been attained, but between thirty and forty appears to be the average over long courses.

The Powers of the Tail.

The part played by the tail during flight is commonly believed to be that of steering. As a matter of fact, the tail is but an indifferent steering agent, but is used with great effect in making sudden turns, balancing, and checking flight when alighting or taking a new direction. Turning movements are effected rather by flinging the weight of the body over in the desired direction, much as a cyclist in turning a corner bends his body over from the vertical. When, in flight, this alteration in the poise of the body is made, one wing is thrown up and the other down, and as a consequence the body, following along the line of least resistance, the course is altered. It is chiefly in sudden turns and twists during flight, and in alighting, that the tail is used, and during this latter movement the short quills of the bastard wing are also used. These tiny feathers are further called into play in checking flight as when a sudden stoppage is necessary. The marvellous soaring powers which some birds, such as the Eagles, Kites, Adjutant Storks, and Pelicans possess in such high degree have exercised the minds of some of

the acutest of bird students, yet even now we are almost entirely in the dark as to how this form of flight is sustained. According to some, the bird mounts by taking advantage of up currents of air, while, according to others, it utilises horizontal currents of varying degrees of velocity. Probably both are right. Soaring differs from the normal flight in that the birds mount in spiral circles on fully-extended and motionless wings. The problem of flight is one that has come much to the fore of late by the impetus which new inventions have given to the development of flying machines. But, fascinating as the matter is, only those who are tolerably familiar with physics and mathematics can really acquire a thorough grasp of all the factors that must be reckoned with to make it really

intelligible, and these are few. Nevertheless, to most of us the consciousness that flight presents problems which we cannot solve is a trial lightly borne. We enjoy, perhaps, all the more the rare delight of a flock of Starlings at eventide, and marvel the more at their wonderful evolutions; we enjoy no less to watch the flocks of

Dunlin on the

mud-flats in autumn as they wheel about, now looking like a small snowstorm and now well-nigh invisible as they turn towards us, first the dazzling white of the underwing and breast and then the dusky upper parts. In flight of this kind, furthermore, something more than mathematics has to be taken into consideration; the marvellous co-ordination of movement pervading huge numbers such as are often seen in the Starling flights seems to defy analysis. Who gives the word of command, and by what magic is it passed, so that the host changes form with the exactness and suddenness of a kaleidoscope? Is this amazing unison reached only after laborious rehearsals, or is it instinctive? What purpose does it serve? These are questions which appear well-nigh insoluble, yet, perhaps, on this account they become the more alluring.

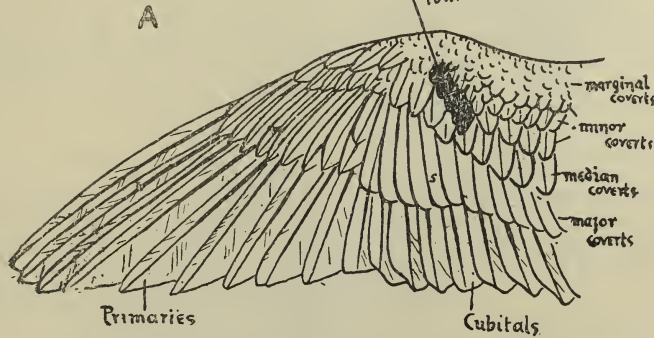


Fig. 3.—Wing of a bird to show the covert feathers and their overlap. The major coverts have a distal overlap. What is meant by a "provisional" overlap can be seen in the medium and minor rows. What is known as the "intercalary" row occurs in nearly all wings which have no 5th. secondary.

(To be continued.)



Delicate Birds.

By F. FINN, B.A., F.Z.S.

One of the greatest puzzles—I may add one of the greatest annoyances—of the aviculturist who likes to keep a variety of birds lies in the delicacy of some species. There are some birds which, if you put them on an ordinary seed mixture suiting their type of feathered creature, or on one of the “good stock mixtures” for soft bills, if they happen to be of that persuasion, will thrive apace, while others will incontinently die off with greater or less expedition.

Pioneer Aviculture.

Now, it has long been my conviction that if you really want to keep a given bird you can, and so, whenever I have heard that “one couldn’t keep so-and-so,” I have always yearned to go and do it. And I had some good opportunities of this in India. The Indian fancier swears by “satoo,” which is pea-meal (really meal, not the very fine flour we use here for thickening soups). This he makes up into a paste with water for coarse-feeding birds, and ghee (clarified butter) for more delicate ones. Anyhow, “satoo” is the usual thing out there for everything that eats soft food.

An Unfortunate Barbet.

The Indian Barbets are birds which, as a rule, do well in captivity. They are fruit-eaters, and take kindly to the satoo substitute. But the commonest of these Barbets, and about the prettiest, the little “Coppersmith,” or crimson-breasted species, was, I was told, impossible to keep. After a few days it got “thick,” and soon died, if one tried to keep it. So convinced of the hopelessness of keeping the Coppersmith were the bazaar dealers that I often got them to give me a bird, they admitting that they knew it would die on their hands.

The Difficulty Solved.

Considering that Barbets never see satoo in the wild state, it struck me that a return to nature might be advisable, so I procured newly-caught Coppersmiths and fed them on banana. On this I found they lived and continued to do well, and I reared the young on this diet. Specimens so reared I gave to my chief, who kept a few birds, which had bread and milk as a standing dish of artificial food, not satoo. The Coppersmith partook of this—they had fruit as well, of course—and did well upon it also. It was then obvious that there is something in satoo which does not suit the constitution of this particular species. Yet, be it observed, it is good for most soft food eaters, so that one should not really condemn an article of food because some delicate species cannot do with it.

A Paradoxical Oriole.

It will be observed that the commonness of a bird is no criterion of the ease of keeping it. A similar case is that of our Blue Tit, which is not by any means “a good liver” in captivity, although so widely distributed and common when wild. Similarly, in India, I found that the Black-headed Oriole, although the commonest species of Oriole, in Bengal at any rate, seemed a very hard bird to keep. Fledglings were often brought in and old ones caught, but seldom indeed did one find an established captive. A friend of mine in Calcutta had one, and some time back one was actually brought over here, and lived for some time at the Zoo. Here, again, I suspect the satoo diet does not suit the individual species.

Why Some Birds are Delicate.

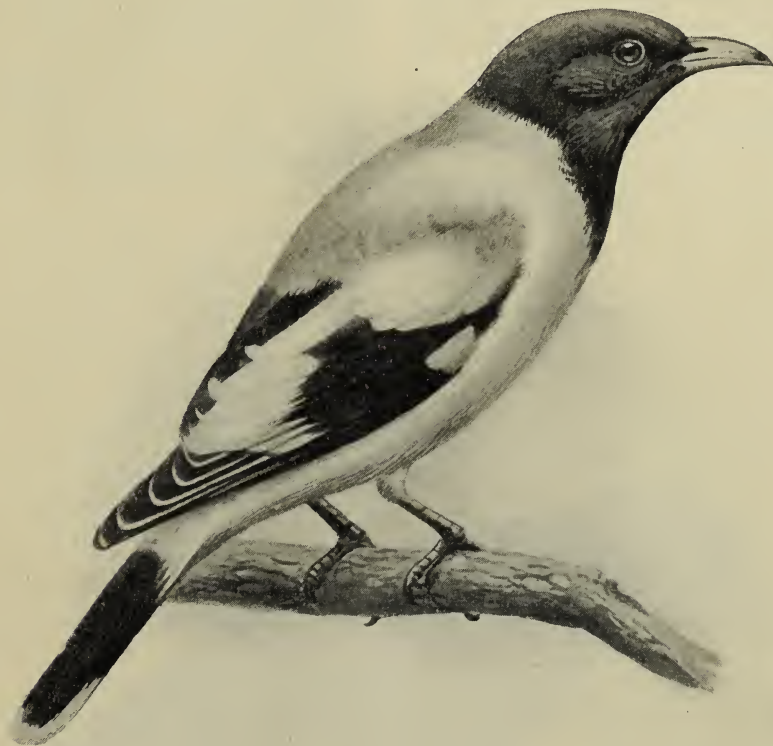
My theory is that some species can do without their natural articles of diet better than others, but one cannot tell this without experiment. Generally speaking, large birds will assimilate strange foods better than small ones, and omnivorous feeders better than those of more limited diet. This is natural, because the food of the larger species is of a grosser nature, and the stomachs of omnivorous species naturally adaptable to varied foods. Yet one must remember that the omnivorous Tits are not the easiest of subjects, and that the Dipper, a good-sized bird, is so difficult a one that no one has as yet kept a specimen a twelvemonth.

The Dipper Difficulty.

I have seen old-caught Dippers “meated off” at the Zoo, and it is a great puzzle why they “pop off” so. But, when one comes to think of it, no diving bird is an easy subject for captivity, except the Cormorants and Penguins, both of which naturally spend much time in reposing ashore. With the Grebes, Auks, and Divers there always seems to be some difficulty in keeping them alive, and this, I think, applies to the Dipper also. I believe the reason is simply that they miss the violent exertion involved in forcing themselves below and through the water, and so get generally out of condition.

The Importance of Exercise.

The vast importance of Exercise was shown me in the case of the Bhimraj, or Rocket-tailed Drongo, in India. Few of these birds, many of which were brought to Calcutta every season, newly hand-reared, survived a year in the hands of the natives, yet this Drongo is a big, stout-looking bird, and easily fed. The reason why



The Black-Headed Oriole (India).

By permission of Messrs. Hutchinson & Co.

it did not live better was simply that people would keep it in cages about eighteen inches across, in which it could not possibly get proper exercise. In a flight I found it was quite an easy bird to keep. It is not much of a hopper, but wants room to fly about.

The Two Mynahs.

The Hill or Talking Mynah was reputed more delicate than the House Mynah. The reason was simple. The House Mynah is an active, omnivorous bird, like our Starling, the Hill Mynah a heavy, awkward one, feeding on fruit mostly. Fruit-eating birds have ravenous appetites, and, given a heavy bird in a small cage glutting itself on more nourishing food than fruit, the obvious result is plethora and fits. The Pied Mynah, on the other hand, did not do so well on satoo for the opposite reason, being specially insectivorous, so needed something extra.

The Way Out of the Difficulty.

It is, of course, impossible to entirely overcome the difficulties of keeping some species, which seem more highly strung interiorly—if I may so express it—than others; but my experience leads me to this belief—that what birds want more than anything is plenty of space and natural food. Given these, I don't think any species is beyond the power of aviculturists to manage. In the matter of space, one ought to cut one's coat according to one's cloth—keep small birds if one only has a little room, and so on. Seed and fruit eating birds are easily catered for, but the lover of insect-eaters should be constantly on the qui vive to find new substitutes for the insect life his pets would naturally consume. In India raw fresh-water shrimps are procurable and well taken by insectivorous birds, and the tiny crustacea found in our fresh waters might be tried here.



The Starling.

The Breeding of Canaries.

An Open Letter to a Young Beginner.

By A. McINNES.

A small nephew of mine becoming the happy possessor of a pair of Canaries desires to breed from them. In answering his query as to what to do and what not to do, and "would I write it all down," I thought that perhaps the letter would be of some use to other youthful fanciers and beginners if set out as an open letter.

MY DEAR FRANKIE,—

When aunt gave your message about the birds to me and asked me to tell you "all about it," I felt I had got a tough job. However, here you are.

In the first place, "Have you a breeding cage?" You have seen my breeders—the double ones with the wood and wire slides and loose wire fronts. Well, have one like that. You will find it handier than a single breeding cage. The cost is very moderate, too.

I could let you have a cage, for that matter, if you care to accept it. Let me know as soon as possible, and I'll send it per carrier. I told aunt to buy you a nest-pan the same pattern as I use. The white pot ones with the wire hanger. Knock in a small-sized nail between the perches, but an inch or so higher than the sticks.

You will also need three felt linings and one nest-bag of hair and moss. There isn't much in one nest-bag, I hear you say. Neither there is, but there is plenty of nice, sweet moss beside you. Go and gather a handful and let it dry. It is better than any bought stuff, and does not go to dust. Plenty of moss and just a little hair is all that is wanted. Now about the birds.

Don't Be in a Hurry.

The breeding season will not slip by and leave you standing. Patience. I expect that the cock is quite ready for the breeding cage. Aunt said he was singing all day long. Besides, I know his family. He is only a youngster, bred last year. Not a grand show bird, of course, only a songster, but a good one. The hen I know better. She bred a nice lot for me last year. She's in her second year, and will do you some good as far as numbers go. She will feed anything. A note of warning here. Leave her alone when she is nesting. Don't get anxious and worried and keep poking and peeping. If you do you'll repent it. The hen knows better than you what to do and when to do it. Depend on that. I am not going into a lot of detail about quality and feather and other fancy points. What you want, I take it, is to know how to

breed Canaries. I know that when you get through this year the next season will find you with better cages, better birds, and more knowledge and experience. The ambition to breed winners will come soon enough.

A Quiet Corner Needed.

When you get the breeding cage put it in a quiet corner of a bedroom, a sunny room for preference. A few husks on the floor will not ruin the carpet. Slip in the hen one side, the cock in the other side of the wire slide. They will soon take notice of one another. In about a week's time you will have seen them hobnob to each other and call to one another, and, more than likely, you will see the cock feed the hen. You can draw that slide away now. Put up the nest-pan with the felt lining in it, and shove in a handful of moss. Don't trouble any more. Keep the seed-box full and the drinkers sweet and clean. A sprig of greenstuff, of course. Any sort will do. Fresh dandelion leaves, crisp lettuce, or nice clean watercress. You can expect now to see signs of nest-building.

Self-restraint a Virtue.

Now is the time to practise that self-restraint you say you possess. Do not pull down the nest-pan to see how the birds are building every time you come home. It is rather difficult to tell you in writing how a hen looks just before she lays, but she'll look a little mopey and miserable. The best way is to watch the nest in the morning. If the hen is on the nest when you look at her about breakfast-time, watch your chance for a peep in the nest. If she sits hard, try and get her away gently. There's sure to be an egg. Open the cage door quietly, take down the nest very gently (the hen will hop off when she feels you at the nest), and peep in. If you leave the nest on the nail and feel with your fingers you are apt to crush such a dainty thing as a newly-laid Canary egg. I can see you eyes sparkle and your face all smiles. What a glorious thing it is to be a fancier and have the first egg of the season lying there so snug and nice! Now, quickly yet surely, lift the egg away with a spoon—fingers are clumsy, eggs are fragile. Place in the nest one of those dummy eggs I gave you, replace the nest, see everything snug, and the true egg in a safe place. A saucerful of sawdust or a box filled with cotton-wool, anything soft and cool will do.

What April Brings.

Now, we'll say this happened on the first of April. The second of the month will see another egg. Do the same thing with this second egg as you did with the first. Put it away safely. One dummy egg will do in the nest. Do the same on the third morning. Lift down the nest, but instead of taking away the newly-laid egg replace the other two, dust the nest over with a good shake of insect powder, and put it back. Remember the date, jot it down somewhere, and wait patiently. Do not let anyone disturb the birds at this time. Feed them yourself, with nothing but plain seed and clean water. Give a bath now pretty nearly every day if the weather is very dry and hot. Have no fear but what the chicks will be there in good time. But look here, Frankie, let Norah understand that the room the cage is in is forbidden ground to her. Girls are so inquisitive, and so are boys, so remember. On the thirteenth morning, counting from the day you replaced the eggs and set the hen, a little egg food is good to place in the cage. A finger-pan or a small drawer-pan will suit.

The Making of Egg Food.

The egg food is easily made, but there is nice egg food and nasty egg food, and I daresay the birds know good from bad. Fancy goes a long way with birds as well as with human creatures. Boil an egg very hard, take a slice of bread and grate it nicely with a grater, throw away the crust and any lumps, rub the egg in the same way, add a little sugar, mix all together lightly, and there you are. Simple, eh, Frankie? Try it. Good stuff comes nice and crumbly, bad stuff is sloppy and sticky, the result usually of the egg not being hard enough. Well-made egg food can be relished by anybody, yourself included, and ought to almost rear chicks simply by the smell.

The Time of Hatching.

The fateful morning comes. Don't get up too early, Frankie. If at the usual breakfast-time you can't hear anything strange in the cage, such as the strange sounds a newly-hatched chick makes, take down the nest-pan. Ease the hen gently off and peep. Ah, a little hairy thing! That's enough. You've got chicks at last, Frankie. Never mind if all the eggs have hatched or not. Come away. Give your egg food, clean water, and fresh seed, and don't hang about. The hen can't keep an eye on you and feed her chicks at the same time.

Early Treatment of the Young.

When the young are two or three days old take some hemp seed, run a bottle or your mother's rolling-pin over it, and crush it, not into paste, but so that the seed husks are easily broken. This is a grand thing for young chicks,

Frankie, and yours will grow up strong and lusty if hemp seed, egg food, and nice, fresh green food is given, often, but sparingly. Fresh and sweet every time should be your motto, my boy.

As They Advance.

About three weeks old young Canaries are nicely feathered. This is the time when you must not take any liberties, such as taking down the nest to show people and all that sort of thing. If disturbed the youngsters will leave the nest and refuse to go back. Then you'll be worried when, after a frantic flutter, you see your precious chicks crouching in corners or trying to get through the wires. Once out of the nest you never get them back again. I have stood for nearly half an hour myself, hand on nest, keeping down a lot of chicks, but all to no good. Everything smooth going, however, sees your chicks out of the nest about three weeks or a month old.

Cleanse With Fire.

Once the nest is forsaken, take it away. Burn the felt lining and bake the pan in the kitchen oven. I have refrained from telling you about red-mite, for I think we all get red-mite on the brain. You will have reared a few score red-mite as well as a few chicks, and you must get a firm hold over them. If you see them at all in any numbers have a small brush soaked in paraffin and dose them. I have tried red-mite with it, and at times I have seen them take all the oil I could give them and be lusty at the end. I intend to try cedar oil myself this year, but I fancy nothing can keep them away altogether. They must be killed and fought against continually. Always war to the death.

The Second Family.

Once the chicks are free of the nest, place them in the second partition of the cage, slip in the wire slide, and scatter a handful of sand on the floor of the cage. Crush some Canary seed and throw that on the sand, and put in a dish of egg food as well. Keep the old birds supplied with egg food as well, and watch for the young chicks to pick on their own. When a month or five weeks old they can be taken away. The hen will probably refuse to feed them through the wires of the slide. About the sixth week from the start you can safely put in another nest-pan and go ahead for the second round. Give a pinch of maw seed to the youngsters now and then, but no greenstuff.

I fancy that covers everything, Frankie. Patience and carefulness is the best I can say. Patience and no undue interference make good results.

Your loving Uncle,

A. McINNES.



A Green Border Fancy Canary.

A most popular variety in Scotland and the Northern Counties.

A Cornish Celebrity.

A CURIO SHOP AND ITS OWNER.

Cornwall is known to business men because of its tin mines, to the officers of the King's Revenue as one of the last strongholds of the old-time smugglers and wreckers, to seamen because it affords them the last glimpse of the dear Home Land on their outward voyages across the Atlantic and the first on their return; to pleasure seekers it is known for the virtue of its health-giving breezes, the luxuriance of its verdure, the beauty of its landscape, and for its old-world associations.

It has been said, and with much truth in the remark, that those who have been to Falmouth and have not visited Burton's "Royal Old Curiosity Shop" have not seen Falmouth at all. Mr. Burton himself is a ruddy, stout, hearty, bluff Cornishman of the true type who has

Mr. Thomas Burton,
Secretary and Founder
of the
Falmouth Cage Bird
Society.



the reputation of being one of the shrewdest business men in the West of England. In addition to which he certainly may be said to be one of the characters of the county.

It would be impossible to convey to the readers of *THE BIRD WORLD* a better representation of John Burton than that which appeared some time since in the "Court Circular," which in an article singing the praises of Falmouth, has something to say anent Falmouth's great celebrity. Our contemporary said: "No article on Falmouth would be complete without some reference to the Old Curiosity Shop of John Burton, for he constitutes the chief entertainment of the town. His stock of curios is without question the most heterogeneous ever grouped together in one building, and his emporium has been visited by a list of Royal and distinguished visitors numbering some hundreds, including the Duke and Duchess of Edinburgh. When His Majesty, then the Prince of Wales, visited Falmouth in 1887, it was arranged that his Royal Highness should make a call upon this 'character.' Unfortunately, the narrow streets became so crowded that the Prince was prevented, and Mr. Cavendish Bentinck wrote to Burton asking if he could send a collection of his wares for the Prince's inspection. Upon this he addressed a letter to the Prince in person as follows:

"Respected Albert Edward,—I much regret to find you are indisposed. If I were to fetch to Kerris Vean a Pickford's

waggon-load of samples it would be utterly impossible to convey the remotest idea of my ponderous conglomeration of curios; but if I could possibly prevail upon your Royal Highness to go through my shanty I would give you "local wit and humour," which would throw you into a state of laughter, and there is every probability it would counteract your cold. Yours until we meet in the next hotel, "JOHN BURTON."

"The Prince laughed, and subsequently made some purchases by commission. As I have said, the man is a character, and such a one as Dickens would have revelled in, while his conglomeration of curios from all parts of the globe is as original as the man himself."

It was some forty-five years ago that Mr. Burton established this business, and to such an extent has it grown that now it not only occupies the original shop, but twelve rooms above it, three stores at the rear, a cellar underneath, a large auxiliary store at Fish Stroud Hill, and a shop in Church Street. In these premises are stored thousands upon thousands of curios from all parts of the world, brought hither by the ships of all nations. One of the leading professors of the British Museum after visiting John Burton made the remark that he had been all over the world in one hour and twenty minutes, for from every land and every clime are to be found objects of interest and rarity.

If John Burton had turned his attention to the business of a showman and taken to collecting bearded women, tattooed men, skeleton mashers, and other living oddities, Phineas T. Barnum would have suffered the harrowing pangs of jealousy and would have had a hard struggle to assume the proprietorship of "the greatest show on earth."

In addition to his business as a curio collector Mr. Burton has established a big connection amongst naturalists, and is in close connection with such men as Jamrach, of London; Cross, of Liverpool; the superintendents of the English and Continental Zoos; and the owners of the travelling menageries. In this department of his business he has handled such diverse creatures as tigers, lions, panthers, leopards, camels, bears, pumas, wolves, hyenas, ocelots, elephants, rhinoceri, giraffes, zebras, deer, monkeys, gazelles, sloths, armadillos, ostriches, eagles, vultures, pelicans, falcons, parrots, cockatoos, humming birds, storks, penguins, cranes, crocodiles, alligators, serpents, rattlesnakes, boa-constrictors, etc. In fact, anything which comes in his way from across the ocean will John Burton traffic in, and often has he purchased thousands of parrots and other birds in one bargain.

In his business he is assisted by his sons, one of whom is Mr. Thomas Burton, the founder and secretary of the Falmouth Cage Bird Association, a young flourishing institution which is doing much for the culture of bird life in the district by the holding of exhibitions and instructive and entertaining meetings.

A Talk About Foreign Birds.

With Special Reference to the Hobby in Scotland.

By GAVIN ALSTON.

The keeping of foreign birds has been indulged in since the earliest of times. In ancient Scripture we read that Solomon had a navy of ships, and that they brought ivory and apes and Peacocks, and when that wise King spake of all fowls I have no doubt he gave his experience of those he obtained from foreign lands also, and I believe it has always been the custom when sailors and travellers visited foreign countries to bring home specimens of the avifauna of these countries. The Parrot family lent themselves more readily to this custom than perhaps any others. Their bright plumage, together with their adaptability to captivity, were reasons enough to make them favourites with seamen, and as most of them found a ready market when the ship returned, it is easy to see how these birds so admirably suited Jack. But I think there is another reason why Parrots were among the first foreign birds to be imported to this and other countries. These birds nest in holes in trees, and are more easily caught than most birds on that account. For instance, every schoolboy knows that it is easier to catch a Sparrow on the nest than, say, a Chaffinch, and, as the average sailor has no appliances for bird-catching, Parrots naturally fell an easy prey. Although foreign birds have been imported for centuries, it is only within the last thirty or forty years that they have come in number and variety. Even nine years ago, when I started keeping them, the trade of importing might be said to have been in its infancy, but the money that is now paid for imported birds must amount to several hundred thousand pounds per annum.

Foreign Bird Literature.

The literature about them at that time was also scant and dear. There were then no specialist weekly papers for cage-birds, and the papers there were dealt more particularly with poultry and Pigeons, and in some cases with quadrupeds also, so that foreign birds hardly ever had a look in at all. True, there was the "Avicultural Magazine," and it was doing a useful work among a favoured few, but among the many ignorance prevailed, and the names of the different species were to most people so much Greek or Latin, or Hindustani for the matter of that. Contrast that with the present time. Now we have in "Cage Birds" a most up-to-date weekly journal, dealing exclusively with birds, foreign birds receiving their just share of attention. Besides, there are two monthly magazines dealing almost entirely with foreign birds, and THE BIRD WORLD, which remembers

them with a large share of its articles. Several cheap books have also been written on foreign birds, and anyone wanting to learn about them has plenty of reliable literature ready at his hand.

The Time to Purchase.

What is the best time of the year to purchase imported foreign birds? This question, like many others, is more easily asked than answered. Coming from warm countries, as most foreign birds do, it needs no stretch of imagination to see that winter is not the proper time, as the extreme change from a warm to a cold climate cannot be expected to agree with them. Spring appeals to us as a more suitable time, but as a large proportion of foreign birds come from the Antipodes, their natural moulting season is in our spring, and, as we all know, the moulting season is a trying time for birds, even when the conditions are favourable; therefore it is much more trying when they have to endure a lower temperature at a time when their vitality has been reduced by a long journey. I have no hesitation in saying that summer is apparently the best season to purchase imported foreign birds, but it is best not to be too hasty in arriving at conclusions.

Birds are often confined in large numbers in small compartments during long journeys, and the consequence is they arrive in very bad condition, their heads often bare and their flight and tail feathers broken. Given roomy quarters, their body feathers are soon replaced, but their wing and tail feathers will not grow again till they moult the following spring, and to keep them all through the autumn and winter in this ragged condition is what no aviarist likes. I have never heard autumn advocated as the best time to get foreign birds. The shortening days and the weather turning cold and damp seem instinctively to tell us that is not the time. But there are other factors to be reckoned with when getting together a collection of rare foreigners. In the first place, it is only at certain seasons that some species are imported and only once in a while that others are. Thus you have either to secure them then or pay double afterwards, and run the risk of perhaps not getting them at all. Then there are other species that only appear in the market at very rare intervals, and you have to buy there and then, or you may have grey hairs before you have another chance. In reality, there is no right time for purchasing imported birds, but I think for preference early spring is the best. They have time then to recover from the journey before the moult sets in. Of course you must

Some Pleasing Foreign Finches.



Bengalese, Avadavat, Diamond Finch.

supply artificial heat till the summer sun drives away the cold out of the air. By that time they will be through the moult, and then you may turn them into an outdoor aviary, and as a rule you need trouble yourself no more about them.

From Whom to Purchase.

As I said before, foreign birds are now imported in large numbers, but the figures which dealers advertise are often very much exaggerated. You may often divide the birds advertised by ten, and in some cases by one hundred, and you will then arrive at the approximate number they hold. I advise purchasers to deal with firms who have the birds actually in stock, and not in their mind only, as is often the case. As foreign bird dealers' terms are generally cash, it is wise to endeavour to know a little about the reputation of the firm you intend dealing with, as there are men in this trade, as in all others, who may be classed as good, bad, and indifferent. Foreign birds are a very fickle commodity, both as regards condition and nomenclature. It is best, therefore, to deal only with firms who have a reputation to lose. It would be out of place to mention any names, but one dealer has taken several trips to Africa to secure his stock, whilst one of the firms sends one of its partners to Australia to catch their own birds and superintend them during the voyage. But while there are many bird shops of repute, there are others—what shall I call them?—filthy dens, to visit which makes your heart sick, and you leave them a sadder but a wiser man. No wonder some humane persons are trying to make the keeping of birds in cages illegal. Their ideas have been formed when passing shops such as I have referred to. Had they instead happened to have a look through a well-ordered aviary and seen the little captives—content, singing, courting, and perhaps nesting—their views might have moderated on the subject.

Of course you cannot persuade these people to enter a bird show, where they would see the finished article in a cage suitable for its adornment, or they would be convinced—ay, and against their will—by the bloom and steadiness of the exhibit, that the little inmate was healthy, happy, and well cared for in its adopted home. But to return to the purchasing of foreigners. I prefer, when possible, to get them from private aviaries acclimatised and in perfect condition, and although you may have to pay a-half more for them, they are usually cheaper in the end.

Treatment of Newly-purchased Birds.

Take a look at the food they have in the travelling cage, and let them have access to the same kind in their new quarters. Birds coming off a journey are invariably thirsty; therefore, put water inside the cage, but be sure not to put in cold water; let it be tepid. The drinking of a lot of cold water renders the birds liable to take a chill, or it may start diarrhoea, the results

of which often prove disastrous. When the new imports are, as it were, hardened off, you may try them in flight cages or aviaries, but you must keep an eye on them for a day or two to see that they are getting on all right.

Aviaries and Their Construction.

As aviaries are preferable to cages for foreign birds, it will not be deviating to say a word or two about them. Although it is desirable, it is not always possible to have artistic or expensive erections, nor is it necessary that they should be. The cost must be determined by the funds at the disposal of the party involved. Small aviaries are more suitable than large for small birds, or, in other words, a large aviary is better divided into compartments than in one big stretch from end to end. There are various and obvious reasons for this. Birds of the same size and habits can in this manner be enclosed together. The weak and defenceless can be separated from the tyrannical and strong, any that develop pugnacious habits can the more easily be caught and removed. Young ones can be put in a different compartment as soon as they can shift for themselves, and the parents can be separated from each other when the breeding season is over, which it is often necessary to do. The arrangement of the aviaries is also a question of some importance. The aspect should be south, but south-east to west will do. A portion enclosed and an open flight seems to find most favour, and on a fine summer day I would not like to enter into argument with anybody on the subject. This arrangement seems almost ideal, but here in the West of Scotland, where we have six months of winter and six months of, often, a very cold and wet summer, I have found an aviary built on a different principle work out with better results. I think an aviary enclosed all round, so that it can be shut up in stormy weather, and the windows opened on fine days, is most suitable for our variable climate.

Heat or No Heat, Which?

Then the question of whether artificial heat should be supplied or not is a debatable question. Some aviarists are always telling us about the hardness of foreign birds, how, notwithstanding that they come from tropical climes, they can endure the frost and fog which we alternately experience. They tell us that fresh air is the great invigorator and disease resister, that artificial heat is not only unnecessary, but detrimental, and they ask how many degrees of frost you think foreign birds can stand. I must confess I could not tell them, for I have never tried. I believe in making my birds as comfortable as I can, and if one has valuable birds he does not care to work too many experiments or take unnecessary risks. Further, a little heat on a cold day makes it more comfortable when performing the feeding and cleaning operations.

Food, Feeding, and Water.

The food supply in an aviary should be kept on or near the floor, as by having the food vessels higher up the birds are more ready to sit on them when not feeding, and so keep the others back. It is all the better if you can have a gravitation water supply in the aviary, with each saucer doing service for two compartments. Let the water run off at least once a day, rinse the saucers well out, and if the spigot should be leaking a little so much the better. I think I hear someone say: "I cannot have an aviary. I have no place to erect one, not even a back-yard." You can keep foreign birds for all that. For six months of the year I keep many of my foreigners in three-foot cages, and they are bright and happy among themselves and a source of joy to their owner.

The Birds Themselves.

Having gone through the preliminaries of foreign bird-keeping, let us now proceed to have a talk about the birds themselves. When being shown through some fanciers' stock of birds I sometimes ask if they do not think of adding a pair or two of foreigners to their collection. Their answer regularly is: "Foreigners are

pretty, but I am not fond of them. I prefer the British and Canaries." Foreign birds are like some foreign fruits—you don't care for them at first, yet you acquire a liking for them. When I first procured a copy of the "Avicultural Magazine" I scanned the contents, and thought there was nothing in it to interest me. But, as I had paid something like 10d. for its few sheets, I put myself under the penalty of reading it, so as to try and get a return for my money. It does not need a deep pocket to start keeping foreign birds. Many interesting and charming species cost little more than British, and, as most readers of THE BIRD WORLD already keep some British, they will understand the rudiments of bird-keeping, and be able to manage foreigners right away without any trouble. Canaries were originally foreign birds. All the different varieties of Canaries have sprung from a little greenish-grey bird found in the Canary Islands, and the different types and colours of Canaries are the work of artificial selection. Dealers advertise many different kinds of birds as wild Canaries, but these mostly are only nearly-related species, for the genuine wild Canary is comparatively rare in the trade, but is sometimes brought home by people who are returning from convalescence.

(To be continued.)



Photo :

Kittiwakes at Home on Ailsa Craig.

[Fred Hallam.]

Bird World Notes.

From My Old Diary.

By T. H. KINCH.

Perhaps these notes from my old diary may be of interest to your numerous readers. From a child I have always had pets of some kind—either cats, rabbits, rats, mice, or birds. I have kept rabbits by the hundred as a boy, and, had I known as much about them as I do now, should have established a new variety—one with black ears, nose, and feet, with a fawn body. But "Cage Birds" is not a rabbit paper, so I must not trespass. I had a quite young Canary given me as a birthday present, which turned out to be a hen. I was at that time about seven years old. I was advised to get a mate for it, and as I could not get a Canary one given me, I borrowed a cock Goldfinch to put with it. I put them together, never thinking that I should have to put in building materials, so the eggs she laid were all broken at the cage bottom. Then the Goldfinch died; and that was my first start in Mule breeding. This simple instance left such an impression on my mind that I then began to study birds, and to keep them. In those days there were plenty of people to give me advice, but I am afraid their advice was, like my knowledge, worthless.

I had, the next year, a nest of young Thrushes given me, which I hand reared. I saved three out of four. The food I gave them was milk sop and barley-meal made into a paste, with a few worms daily. Only one was I allowed to keep; the rest I gave away. This one, in spite of all the rough treatment it received, I kept for years; it was a good singer. I might here state that my parents were very strict, and made me write in a large entry book all which took place respecting my birds, also the food, etc., I gave them. I did not like this task at all, but I had to do it or else give up my birds. Many a time since have I been thankful for this discipline, which I commend to young beginners. Many a good half-hour have I spent going through my old diary, and many a laugh have I had over my simplicity. When I was first advised to put a large stone in my Thrushes cage and give them snails to crack I was amazed, and could not credit a bird having that knowledge; but after watching it and seeing the results I found that my adviser's knowledge was superior to mine.

In the early seventies no bird papers reached the country, so I had to store up the knowledge gained and note it down for further guidance, which proved very useful as I grew up. The friend who advised me as to my Thrush was an under-gardener in a large establishment. He taught me how to catch birds; he used to set a hollow basket-lid with twigs twisted, and baited underneath. Before long I became quite expert in this mode of capture, but at the present time I cannot think how it was done. As we had

several of these traps about, it was very interesting to go the round of them. They were always placed on the outskirts of a wood, and many a good bird was taken. One morning we had a black and white Blackbird under one of the traps—a cock bird with white wings, which my friend said was worth £5. I doubted that a bird could be worth that amount, but he did sell it to a fancier in Norwich for that sum. He also caught and sold several Goldcrest Wrens. These were then thought a lot of, but I doubt now if they were exhibited in those days. We soon began clap-net catching. We made a net from old fishing nets, and caught all kinds of birds. My friend, of course, had the pick, and sold them in Norwich; I had what he did not want, and put them in an old outhouse with several thicknesses of net over the doorway, the door being missing. I placed branches of trees for them to perch on.

The varieties caught were Linnets, Chaffinches, and Greenfinches (in great numbers), Hedge Sparrows, Thrushes, Blackbirds, and Redwings. After keeping them through the winter I generally gave them liberty in the spring, and used the outhouse for young Woodpigeons, Jays, and Hawks, which I used to hand-rear and sell for pocket-money. I was also a good hand at bird-nesting and collecting eggs. At one time I had a fine collection. At that time I was living with a relative on a large estate, so I had plenty of opportunities of collecting, but nearly always got into conflict with the keepers, as their preserves were my best hunting ground. On one occasion I was up a fir-tree, and the head keeper managed to get within a few yards of me. I slid down the branches, when he raised his gun as if to shoot me. This did frighten me considerably, for I thought he was in earnest; but when I told my friend he laughed at me, and advised me not to take any notice of the gun, but to run at once if the gamekeeper cut a stick, as that was more like business. On another occasion I was up a hollow tree, after an Owl's nest, when the gamekeeper again got close to me. In coming down I got my foot in an opening of the tree and fell, and on the arrival of the keeper I was hanging head downwards. He threatened to have his revenge, but the affair ended in a little lecture. I told him what eggs I was after, and he helped me to get them, as he was "death" on all Owls, ignorantly believing that they destroyed the Pheasants. I have seen over twenty Owls on his "varmint" pole, besides Jays, Crows, and Hawks. This used to be a sight in the spring, and one which he was delighted to show anyone. The pole was also utilised for cats, dogs, polecats, stoats, and weasels, and my one-time enemy was always good enough to tell me the distinction

between them, and thus I learned many a lesson in natural history. I believe this gamekeeper was paid so much a head for the "varmint." I often went with him on his rounds, when I could collect eggs and birds and assist in feeding the young Pheasants. One job he gave me to do was to water the grass with a watering-can with a rose in. He would not explain to me why he did that, but I found out when I began to keep insectivorous birds.

When I was between twelve and thirteen years of age I used to hand-rear Thrushes, Blackbirds, Bullfinches, Goldfinches, and Linnets. This was always done in my spare time, and before I started to school. Many a morning have I been up at 4 a.m. attending to my pets. My friend used to sell them to fanciers he knew in Norwich, but I am afraid I did not get my full share of the spoil, for I only received a few pence for each. I found that in one year I had made £1 from those I had hand-reared. I did not go in for raising any insectivorous birds until years after, but I have always found them to be just as easy to bring up as the others.

Soon after I was thirteen or so we left the estate and went to Norwich, where I soon caught the Canary fever, as several of my schoolmates' parents were breeders. I used, as an excuse, to take them green food, and so got a look at the birds, and saw the way they were managed. But I was not able to keep a Canary there. I had to be contented with two birds only—a Goldfinch and Bullfinch. My Goldfinch was taught by a fancier to draw up his seed and water. This bird I kept for over ten years—a good ripe age, although I have kept one even longer. After two years' stay in Norwich we came to the Midlands, to another large estate, and, being older and having now a considerable knowledge of birds, I was looked upon as an authority by my Grammar School mates, and led them on many an expedition, both for eggs and young. Many a scrape did we get into over our raids, chiefly over catching with clap-nets, in gardens and grounds in the neighbourhood. Many a net was forfeited; but as we had an unlimited stock of fish netting, and poles could easily be cut, we did not greatly mind. But these evening raids caused us to neglect night school, singing, and music lessons, and then we had to give an explanation and were punished, all nets being destroyed which were not hidden. Then we had to sing small for a time. The birds we caught were of all kinds, and were turned loose into a large stable, fish netting being placed across the door to give light. This stable we made quite artistic with old logs, branches of various trees, and shrubs. This place was never used for its legitimate purpose, and was out of the ken of the authorities. There were three of us in company, and we used to sell our birds to schoolmates and others, and our example caused many a boy to take up birds. We started with British birds, and from them got on to Canaries, and became in time genuine fanciers.

The Moorhen.

By MISS DYDDGU HAMILTON.

"Stop a minute, Bill, these Water-hens are always amusing," said a passing "working man" to his mate. And I, feeling a thrill of sympathy and understanding of his words, shoved along and squeezed myself a little closer to the wire waste-paper basket in order to make room for the two newcomers to the iron railings which surround that small, triangular green space known as "the Dell."

I am a cockney born and bred, as were my parents before me, but in my nature there still survives much of the savage, and at times the longing for a wild, open-air, active life is irresistible. How often have I fled to some quiet country place, resolved to rusticate there to the end of my days! But, alas! I am like the unfortunate amphibian who "cannot live on land and dies in the water." In town I long for the country, but once away I pine for the storied streets, the smoky sunsets, and, above all, for the multitudinous human voices of my native city. Thus it happened that on a hot, sunny day in August, when all my world was away on the moors or by the sea, I was alone, leaning over the railings in Hyde Park, contentedly watching the pretty play of the Moorhens as they chased the sparrows on the grass, walked like St. Peter upon the surface of the water (or rather, I suspect, upon the submerged water-weeds, but the appearance was the same), and danced upon the cool, green lawn, their wings half open to aid their large, bright feet in their leaps into the air. I think that these airy bounds were made in pure joyousness of heart, for the mere fun of the thing, but it is possible that the bird was after some soaring insect. At any rate, I could see none, though I watched the dance to the finish, which occurred after about fifteen minutes, the bird concluding it by plunging into the water, and there diving and splashing itself from head to tail in the manner adopted by ducks.

The Dress of the Moorhen.

The Moorhen belongs to an order (*Fulicariæ*) which contains only five British species, including those shy and unfamiliar birds the Corn-crake and the Water-rail. It is common both on reedy ponds in the country and on ornamental lakes in town parks. It can be seen on the Regent's Park water as well as on the Serpentine and in Battersea Park. It is a small bird, only thirteen inches long, and is dressed in olive brown and slaty-grey, with a white bar on its side and a puff of snow-white feathers under its short tail. Its feet are bright yellowish green in colour, and very large for the size of the bird. They are not webbed at all, as one would expect them to be in so expert a swimmer. Its bill is clear yellow, and it has a scarlet plate on its forehead.

Its Natural Habits.

Our Letter Box.

To the Editor of the BIRD WORLD.

"LITTLE PIP."

In its wild state the Moorhen feeds on slugs, insects, grass (it grazes just like a Goose), and water weeds. When tame in the parks, or when pressed by hunger, it visits farmyards in the winter; it will eat also bread, corn, and poultry-meal. When hunted it dives under water and holds on to the weeds with its feet, leaving only its beak exposed to enable it to breathe. Occasionally under these circumstances it gets entangled in the weeds and drowned. If pursued and caught on land a Moorhen will sometimes feign death, and remain apparently dead, for hours, until a suitable opportunity for escape occurs, when the little creature suddenly springs into life again, and if water be near it will plunge in, splashing up a sheet of spray with its feet to cover its retreat, or if there be no water within reach it will run swiftly away and seek safety by hiding under bushes or in long grass. The Moorhen usually nests on the ground among rushes, which she will cleverly bend down over her seven or eight orange-speckled eggs so that they may not be seen from above. She rears two or three broods in the season, and the elder young will often assist in feeding the younger. To feed their young Moorhens disgorge the food they have swallowed, shaking their heads vigorously from time to time to aid in the process of bringing it up.

Strange Nesting Place.

Occasionally a Moorhen will make her nest in a tree several feet from the ground. Then it is very pretty to watch the bird, not flying to her home, but gracefully gliding and walking from the water up the overhanging branches to her aerial nursery. Like the Coot, when her chicks are hatched the Moorhen will often build additional nests for roosting places. When the Moorhen flies it is feebly and heavily, with a loud flapping of wings; yet it migrates, and its distribution is world-wide. It has a wild, glad cry, often loud and startlingly strange on an evening in spring or early summer. Its form is quaint and lovely, and its graceful gambols and pretty posturings make of the little Moorhen a living poem. But, besides this, it possesses the unflinching attraction of being an amusing creature, the watching of whose ways is an inexhaustible source of entertainment and recreation. Opportunity for studying the habits of these wild birds, grown wondrously tame since they suffer no persecution from man in the London parks, is one of the many privileges of citizenship. Yet how few know the capabilities of the capital, or could find their way to the spots therein where they might be refreshed and exhilarated by meeting wild nature face to face.

SIR,—I am much interested in your Bird World magazine, especially in Miss Rutt's articles on "Little Bird Friends." I have been wondering if your readers would like to hear about my tame canary. His name is "Little Pip," but he has other names; for instance, when he wakes my husband up too early he is addressed as "Noisy Jim." He is 12 years old, not quite pure bred, having some dark feathers on his back. He spends a good deal of his time out of his cage, his favourite perch being on the window sash, where I have placed a narrow cushion to protect his feet from the draught. He is always out during meals, hopping about the tablecloth, his breakfast (a few hemp seeds) he finds inside a serviette-ring, where he never forgets to look for it. If it should not be ready he flies on my shoulder, to see if I have a seed in my mouth for him—if not, he gives me many kisses—sometimes six. He is much indulged in "tit-bits" which we fix between the bars of his cage, such as a fruit jujube, an almond, a grape, a bit of apple or a little jam and biscuit, also he is very fond of eating a primrose or a cowslip. With it all, he is in good health, sings well and takes a bath every day, even in the severest weather. He is very fond of running off to his cage with anything I give him to play with, such as a piece of cotton, a postage stamp, or a threepenny piece. He likes to hear our phonograph, being very partial to a favourite waltz, "Estudiantina," joining in and singing very lustily. We have taken a record of his voice, which is fairly good but a little disjointed, owing to the pauses he made. He has been with me in South Wales seven years, but is a native of Bath, and has been a great traveller, having visited many parts of England and also been with me to France. When visiting the English lakes, I once had to leave him alone inside a coach and four while I took the outside, but he was very happy, singing all the time. If you have been interested in this account of my little pet, I would send you another time a few words on "How I feed my wild birds."

JULIA B. WILLIAMS.

Sunny Bank, Merthyr Tydfil.

[We shall indeed be most pleased to receive your promised communication.—Ed.]



A Rare and Interesting Exhibit.

Mr. Maxwell's Quail Finch, First Prize Camberwell (L.P.O.S.) Show.



Little Bird Friends.

A HISTORY RELATED BY MISS H. B. RUTT FOR YOUNG BIRD LOVERS

(Continued from p. 140.)

CHAPTER VI.

CLEM, THE PILEATED FINCH.

This is a quietly-coloured little bird, but very pretty. He is about the size of a Blue Tit, and not unlike in shape, being more chubby than slender. His feathers are two shades of slatey-grey, and his beak and legs are the same. But the curious part about him is his head. It looks exactly as if he had on a Scotch cap, not a tam-o'-shanter, but a real Scot's "bonnet," the kind that has two ribbons hanging behind and a ditch in the middle of the crown, so that it can be folded up quite flat and put in the pocket. Well, Clem's cap is black and the crown a bright crimson. He generally wears it almost folded up, so that only a narrow piece of the crown can be seen. But when he is excited or pleased he raises the feathers on his head into a crest, then the cap seems to unfold itself, and the crown shines out a brilliant red. Pileated means crested. I am afraid I cannot tell you much about Clem. I have only had him a short time, and I do not seem to know him yet. He is very well behaved, quite a gentleman, and never unpleasant with the other birds, but I don't think he is very intelligent. It may be that I do not understand him, and have yet to learn his language. He is happy and lively, and has a small song, beginning with rather a pretty whistle and ending in a kind of choke.

Clem's Birthplace.

Now we must polish up our imaginations as bright as possible if we are to get the least idea of the wonderful country that Clem came from. Brazil was his birthplace. This, you know, is by far the largest country in South America, including very nearly as much land as the whole of Europe. The greater part of it is in the Torrid Zone, and it stretches north and south of the Equator. It is, I suppose, one of the most brilliant and beautiful countries in the world. Here abound the gaudiest Parrots and Macaws, the curious bird called a Toucan, with an enormous beak brightly coloured in stripes, looking not unlike a Neapolitan ice, and large Emus and Vultures. Here, too, are swarms of the tiniest humming-birds, the metallic gleam of their feathers giving them the appearance of being made of gold and silver set with precious stones. The sun shines down with a clear fierceness that we in England can scarcely imagine. The sky is of a hard, brilliant blue. There is next to no twilight, the sun still blazing near the horizon, the sky, for a few minutes only, becomes gold and crimson, then, scarcely before one realises that the day is over, it is dark, and the stars are brilliant overhead.

The Home of Monkeys and Nuts.

All children know something, at any rate, of Brazil as the place where the nuts come from—those delicious nuts with the terribly hard shells; but as if this were not enough to protect them, they are packed together in a most wonderful way into one huge husk, which is as hard as iron, and half an inch thick. What we should, I think, all wish most to see is a Brazilian forest. Here it is that the Brazil nut-tree grows often to a height of 100 feet. Many of the other trees are of great height, and nearly all in the early summer are covered with the most brilliant blossoms of every colour. Monkeys of different kinds swing among the branches. Palms and very sweet-scented myrtle take the place of bluebells and anemones in our woods at home. Let us imagine for a moment that we have the chance of a stroll in this forest. "How cool and silent it will be!" perhaps we think. But no, not silent. First there is the intolerable screeching of the Parrots, very few sweet singers even among the smaller birds. Then there is the chattering and scolding of the monkeys over our heads. Then, worst of all, there is the tremendous humming of the insects. Do you think I am exaggerating? No, indeed! These tropical insects are so large and exist in such myriads that the sound of their humming is really tremendous, and can be heard through the still air more than a mile out at sea. First, no doubt, we should notice the gorgeous butterflies fluttering in crowds over the myrtle flowers, but then, less pleasantly, our attention would be called to the swarms of stinging insects, some much larger than any we saw before, who would attack us on every uncovered spot, nearly driving us mad. Here, also, roams the jaguar, a fierce and terrible beast something like a tiger, and the enormous snake called the boa-constrictor. Ah, yes! All this is most gorgeous and attractive for a short time. But, after all, a sweet English wood, with its cool, green trees and leafy ground decked with simple flowers, is certainly a happier place for a stroll.

(To be continued.)

LUXURY IN EGGS.

An egg-collector writes: "I have just purchased for my collection of 'British Birds Eggs' that of a Plover, or Peewit, for which I have paid 5d. Last week in Jermyn Street, London, I inquired the price of Plovers' eggs and was informed that they were 3s. each, and they had been 12s. 6d. Now it has occurred to me that, apart from the fact of supply and demand, it is at least (to put it mildly) somewhat of an outrage that when we have so many starving children in the land luxury should be purchased at so high a rate. To me it seems wicked."

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